REPORTABLE

In the matter between: Case No. C 521/2003

IMATU First Applicant

STUART MURDOCH Second Applicant

and

CITY OF CAPE TOWN Respondent

JUDGEMENT

MURPHY AJ

1. This case concerns the difficult but important question of whether the City of Cape Town's imposition of a blanket ban on the employment of diabetics as firefighters amounts to unfair employment discrimination.

2. The respondent, the City of Cape Town, refused to appoint the second applicant, Mr. Stuart Murdoch ("Murdoch") to the position of firefighter on the grounds that he is an insulin dependent diabetic. The first applicant (the union) alleges that the respondent directly discriminated against Murdoch on the grounds of disability, alternatively, on an arbitrary ground or an analogous unlisted ground, being his medical condition as an insulin dependent diabetic. Section 6(1) of the Employment Equity Act, Act No. 55 of 1988 ("the EEA") prohibits any person from unfairly discriminating, directly or indirectly, against an employee, in any employment policy or practice, on one or more grounds, including disability. Section 6(2)(b) provides that it is not unfair discrimination to distinguish, exclude or prefer any person on the basis of an inherent requirement of a job.

3. The respondent denies that the imposition of the blanket ban constitutes unfair discrimination and asserts that the ban is fair and justified on the basis of the inherent requirements of the job of a firefighter.

4. Section 11 of the EEA provides that whenever unfair discrimination is alleged in terms of this Act, the employer against whom the allegation is made must establish that it is fair.

The background

5. Murdoch is a 31-year-old male currently employed by the respondent as a law enforcement officer in the Directorate: Protection Services. He has occupied this position since 1 July 1997 when he was employed as such by the South Peninsula Municipality, which has subsequently been incorporated into the respondent. He is an insulin dependent diabetic with Type 1 diabetes. He has been a volunteer reservist firefighter at Fish Hoek since 1991 when he was still in high school, initially for the Fish Hoek Municipality, and thereafter for its legal successors. As a law enforcement officer Murdoch is not required to render services as a firefighter. He has done this on a purely voluntary basis, though during times of big bush fires in the South Peninsula, he has been permitted to perform firefighting duties during his working hours.

6. The Fish Hoek Municipality was a municipality established in terms of the Municipal Ordinance 20 of 1974. In terms of the Local Government Transition Act 209 of 1993 it became a part of the South Peninsula Transitional Metropolitan Substructure on 1 February 1995, the South Peninsula Municipality on 28 May 1996, and then, in terms of the Municipal Structures Act of 1998, a part of the respondent on 6 December 2000. The restructuring of respondent and its predecessor, the Cape Town City Council, and the 35 other local authorities in the Cape metropolitan area is an ongoing process. The economic rationalization and organization of the respondent's services, including fire and protection services, is taking place in a broader context of local government restructuring nationally.

7. On or about 28 January 1998, Murdoch requested an internal transfer from law enforcement to Fire Services, which also resides under the Directorate of Protection Services. At that stage, there was no vacancy. Vacancies arose for firefighters in the Department of Fire and Emergency Services towards the end of 2002. Murdoch applied again for a transfer within the Directorate: Protection Services, from law enforcement to the position of firefighter on 2 December 2002.

8. As a part of the application process, Murdoch undertook physical tests at the Epping Fire Station and an assessment at a recruitment interview, which he passed in January or February 2003. Murdoch then underwent medical testing on 18 February 2003.

9. Dr John Woolley, an occupational health medical practitioner employed in the respondent's Department of Occupational Risk Management to assess the medical fitness of employees to perform the tasks assigned to them, examined Murdoch and found him to be medically unsuitable for the position of firefighter.

10. Woolley assessed Murdoch as part of a large group of new applicants. He took a brief medical history and had regard to a self evaluation form filled in by

Murdoch. He then had regard to the job functions of a firefighter at the respondent but also generally as set out in various documents to which I shall refer more fully later. He looked also at some medical literature and occupational health guidelines and discussed the matter with colleagues, both fire protection officials and medical experts, including Professor Bonnici, Murdoch's specialist physician, and concluded that in view of his insulin usage there was always a risk of Murdoch suffering a debilitating hypoglycaemic attack, which could prove disastrous on the fire ground. While accepting that Murdoch was an optimally controlled diabetic, and that much of the literature supported the idea that well controlled diabetics, individually assessed, should not be debarred, he felt a blanket ban was still justified. He moreover acknowledged that Murdoch was fit, well exercised and had good vision. As an occupational health practitioner he was evidently principally influenced by his apprehension that the increased risk of hypoglycaemia experienced by diabetics posed a real hazard for a firefighter wearing fire protective ensemble that is encapsulating and insulated, resulting in significant fluid loss and dehydration, especially in view of the unpredictable emergency conditions they work in for prolonged periods of extreme physical exertion, often without rest, meals or access to medication or hydration. In addition, because firefighters need to function as an integral component of a team, he feared sudden incapacitation through hypoglycaemia could pose a risk to other team members.

11. Woolley reasoned therefore that the appointment of Murdoch as a firefighter, given the occupational requirements of the job, would have represented an unacceptable safety risk to Murdoch himself, to other employees, to the general public and to the respondent by reason of his medical condition as an insulin dependent diabetic. He accordingly advised the respondent that Murdoch's condition as an insulin dependent diabetic rendered him medically unsuitable for that position in the respondent's fire protection service.

12. At the time this dispute was referred, existing firefighters who were already in the respondent's employ were not medically examined for diabetes. Nor is there a written policy or collective agreement dealing with the question. Neither the respondent nor any of its predecessors had ever assessed Murdoch's medical fitness as a reservist firefighter in the light of his insulin dependent diabetes as there were no criteria pertaining to the recruitment of reservist fire fighters. During his cross-examination Woolley was referred to a document prepared by the respondent's occupational risk management department, which served as a pre-placement medical job specification in respect of firefighters. The status of this document is uncertain, but it was notable that under the heading of specific medical exclusions no reference was made to diabetes, asthma or obesity. The exclusion was limited to certain phobias and eye conditions. This compelled Woolley to the concession that the respondent had no explicit policy in relation to the other conditions or prior

to this case a blanket ban in respect of Type 1 diabetes.

13. When the union's representative, Chris Hagen ("Hagen") objected to the rejection of Murdoch's application for a transfer, the respondent referred Murdoch to Dr S E Carstens on 1 March 2003 for a second opinion. Dr Carstens is employed as a Principal Medical Specialist at the University of Stellenbosch in the Department of Community Health, where he has been Head of the Division of Occupational and Environmental Health since 2000.

14. Carstens consulted with Murdoch on 19 March 2003 and evaluated his medical suitability for the position of firefighter. He had regard to Murdoch's medical history, his medical condition, Woolley's opinion and information provided by him, including a letter dated 28 January 2003 from Murdoch's treating doctor, Prof Francois Bonnici. Relying on these, his own specialist knowledge of occupational medicine and experience in the field, Carstens concurred with Woolley that Murdoch was not suitable for work as an active firefighter based on the risk that he represented to the respondent with his condition as an insulin dependent diabetic. He too accepted that Murdoch was physically fit and optimally controlled. However, because he supported the blanket ban for the same reasons as Woolley, he did not perform a medical examination on Murdoch, instead merely recording the following note in manuscript between transverse lines across the examination form:

> Examination not done. Decision regarding "non fit for work as active fire fighter" not based on state of physical/clinical fitness but on the risk that insulin dependent diabetes carries regarding hypoglycaemia.

15. On 14 April 2003, Hagen sent an e-mail message to the respondent's senior human resources practitioner, David White-Phillips, requesting full reasons why Murdoch's application had been rejected, pointing out that Murdoch had been a reservist firefighter for more than 10 years and had passed all the tests but was rejected solely on grounds which the union considered to be discriminatory.

16. After some correspondence passed between the union and the respondent, the union received an e-mail response from White-Phillips on 18 June 2003 purporting to be "the final response" regarding the non-appointment of Murdoch. White-Philips stated that it is an inherent requirement for firefighters to be physically fit to carry out their functions and hence part of their assessment to determine physical fitness is a medical examination. The respondent's occupational medical officer had found that Murdoch was not physically fit to perform firefighter duties as he is an insulin dependent diabetic, a condition which the respondent felt could place Murdoch, the respondent and the public at high risk during firefighting. Some five months later, on 14 November 2003, Murdoch was ordered to cease active firefighting duty and to commence watch room duties at the Fish Hoek Fire Station.

17. The dispute was referred to the Commission for Conciliation, Mediation and Arbitration (the CCMA) on 28 August 2003 in terms of section 10 of the EEA. The dispute could not be resolved at conciliation and thus was referred to this court for adjudication.

18. Murdoch's disappointment at the decision to exclude him is predicated on his view that the blanket ban unjustifiably applies outdated, prejudiced stereotyping to his individual situation. An individual assessment of his condition and experience, he contended, demonstrated that he is as capable as any other firefighter to perform the essential tasks of the job.

19. Murdoch has actively participated in many aspects of firefighting. In rigorous and prolonged bush fires, such as the fires that raged in the southern Cape Peninsula in 2000, he was actively on duty for shifts up to 34 hours. During those times, he has never put himself or others at risk as a result of his insulin dependence.

20. In his 13 years of active firefighting, Murdoch has never had a severe hypoglycaemic episode ("a severe hypo"), defined by the medical experts as an episode where third party intervention is needed. Murdoch's last severe hypo was at the age of 10 or 11, within the first year of being diagnosed with Type 1 diabetes.

21. Murdoch is in optimal control of his diabetes, as confirmed by his consultant physician for the past 22 years, Prof Bonnici, a pre-eminent expert in the fields of endocrinology and diabetes. I propose to examine Prof Bonnici's testimony fully later, however, the gist was that, because of his hypo awareness, control, motivation and education, Murdoch is able to fulfil the duties of a firefighter. He also submitted that blanket exclusions from hazardous jobs are based on outdated and prejudiced assumptions about Type 1 diabetes and diabetes treated with insulin. In his expert opinion, each case should be treated on its own merits based on an individual medical assessment.

22. Both Murdoch and Tim Hoy, (a UK firefighter who also suffers with Type 1 insulin dependent diabetes, yet has been a firefighter since 1986), testified that it is easy for them to access fast acting glucose while on duty, as and when needed to counter a hypo. They testified that they control their insulin levels before and during shift times and according to the exigencies of specific situations. This is done by regularly testing their blood glucose levels – a simple test that takes about 30 seconds – by injecting themselves with insulin when needed – that takes about 4 seconds, and making sure that they eat glucose when necessary. Murdoch and Hoy demonstrated in an experiment conducted before the court that they could access fast acting glucose within seconds when dressed in protective gear. Murdoch also testified that he

habitually keeps a bag with a packed lunch on a fire tender when actively attending to fires. This is a precautionary measure in the unlikely event that the utility vehicle that distributes meals and rations to all firefighters during incidents does not arrive. In his 13 years of firefighting, including the extensive fires in 2000, that has never happened.

The essential functions and duties of firefighters

23. Before turning to an assessment of the medical evidence on diabetes and the respondent's risk-averse policy, it is necessary to reflect upon the essential functions, duties and requirements of firefighters. Evidence in this regard was adduced from Murdoch, Tim Hoy and Donald Sparks. Although the witnesses emphasized different aspects of the job, they were broadly in agreement about what the job actually requires and basically confirmed the information contained in the documentary evidence to which they were referred.

24. Mr. Donald Sparks ("Sparks") has had 40 years experience in the fire service where he rose to the highest level until his retirement from the position of Acting Chief Fire Officer in April 2005. He is a registered fire engineer and holds an MA (cum laude) in Public Administration. In his testimony he confirmed that the catalogue of essential job tasks and descriptions contained in NFPA 1582: *The Standard on Comprehensive Occupational Medical Program for Fire Departments 2003 Edition of the USA National Fire Protection Association* ("NFPA 1582") accurately reflect the job tasks required of firemen in Cape Town. The list is comprehensive and includes:

- Performing firefighting tasks (e.g. hoseline operations, extensive crawling, lifting and carrying heavy objects, ventilating roof or walls using power or hand tools, forcible entry) rescue operations, and other emergency response actions under stressful conditions while wearing personal protective ensembles (PPE) and self-contained breathing apparatus (SCBA), including working in extremely hot or cold environments for prolonged time periods.

- Wearing an SCBA, which includes a demand valve-type positive pressure face piece or HEPA filter masks, which requires the ability to tolerate increased respiratory workloads.

- Exposure to toxic fumes, irritants, particulates, biological (infectious) and non-biological hazards, and/or heated gases despite the use of PPE including SCBA.

- Climbing 6 or more flights of stairs while wearing PPE weighing at least 50lb or more and carrying equipment/tools weighing an

additional 20 to 40lb.

- Wearing fire protection ensemble that is encapsulating and insulated. Wearing this clothing will result in significant fluid loss that frequently progresses to clinical dehydration and can elevate core temperature to levels exceeding 39C.

- Searching, finding and rescue-dragging or carrying victims ranging from newborns up to adults weighing over 200 lb to safety despite hazardous conditions and low visibility.

- Advancing water-filled hose lines up to 2.5 inches in diameter from fire apparatus to occupancy (approximately 150 ft); can involve negotiating multiple flights of stairs, ladders and other obstacles.

- Climbing ladders, operating from heights, walking or crawling in the dark along narrow and uneven surfaces, and operating in proximity to electrical power lines and/or other hazards.

- Unpredictable emergency requirements for prolonged periods of extreme physical exertion without benefit of warm-up, scheduled rest periods, meals, access to medication or hydration.

- Operating fire apparatus or other vehicle in an emergency mode with emergency lights and sirens.

- Critical, time-sensitive, complex problem solving during physical exertion in stressful, hazardous environments (including hot, dark tightly enclosed spaces), further aggravated by fatigue, flashing lights, sirens and other distractions.
- Ability to communicate (give and comprehend verbal orders) while wearing PPE and SCBA under conditions of high background noise, poor visibility, and drenching from hose lines and/or fixed protection systems (sprinklers).

- Functioning as an integral component of a team where sudden incapacitation of a member can result in mission failure or in risk of injury or death to civilians or other team members.

25. Sparks highlighted the hostile working environment, the ever-present danger of injury and death, unpleasant working conditions, abnormal working hours and sustained stress levels. Firefighters spend extensive time outside exposed to the elements, tolerating extreme fluctuations in temperature while wearing equipment that significantly impairs body-cooling mechanisms. They

work in wet and muddy areas performing a variety of tasks on slippery, hazardous surfaces such as on rooftops or from ladders. They are at constant risk of traumatic or thermal injuries, and face exposure to carcinogenic dusts such as asbestos, toxic substances like hydrogen cyanide, acids, carbon monoxide, or organic solvents, either through inhalation or skin contact. Accordingly, they are often required to rely on their senses of sight, hearing, smell and touch to help determine the nature of an emergency, to maintain personal safety, and to make critical decisions in a confused, chaotic, and potentially life-threatening environment throughout the duration of an operation.

26. In order to cope firefighters are required to possess mental, sensorial and motor skills sufficient to perform these tasks under such difficult conditions safely and effectively. This includes the ability to be stable with regard to consciousness and to have the functional capacity to respond appropriately to emergency situations. Equally essential is the ability to maintain mental alertness and reliable judgement necessary to perform firefighting functions without posing a threat to self or others; and at the same time have acuity of senses and ability of expression to communicate accurately while using equipment. At the same time firefighting requires a high level of aerobic fitness, strength and good vision.

27. The operational incidents to which firefighters are exposed vary considerably. In Cape Town they include ship fires where firefighters are exposed to extreme heat, poor visibility and stress in ship holds. Bush fires are also common in the peninsula often raging out of control for days, thus involving long shift work. A unique feature of firefighting in Cape Town are informal settlement fires where numerous dwellings burn down and firefighters are tasked with the gruesome and stressful task of recovering burnt bodies. Other kinds of fires are those commonly found around the world, including: factory fires, with exposure to chemicals and explosive materials; hazardous material incidents involving spills of acids, radio-active substances, flammable solids, gases and corrosives; accidents; collapsed buildings; bomb blasts and ordinary house or commercial premises fires.

28. It was accepted by all the witnesses that Murdoch had the necessary state of physical fitness to perform the tasks of the job. He keeps fit by attending gym regularly, by cycling and jogging. Over 13 years as a firefighter he has accumulated extensive experience in bush fires, house fires and vehicle accidents. He has however never attended a ship fire and has limited experience in factory fires. Sparks in his testimony elaborated particularly on the hazardous nature of ship fire work and the potential danger such would pose to a diabetic, even though ship fires are not a common occurrence, there having been only about 10 or 12 during the past 3 years. Nevertheless, the exertion expended in industrial fires, ship fires and high-rise buildings was much greater and might more easily precipitate a severe hypo. These fires in

particular involved intensive, prolonged firefighting under severe conditions.

29. Sparks was therefore convinced that the volatility of the firefighting situation coupled with the unpredictability of the possible hypoglycaemic effects of decreased blood glucose levels brought on by insulin injections would yield an unacceptable risk of employee failure in critical emergency operations. Carstens and Woolley, as explained earlier, shared his disquiet. In particular, they felt that it would be difficult for Murdoch to maintain proper control of his blood glucose level during the unpredictable strenuous exercise involved in a sustained period of active firefighting.

The nature, effect and treatment of diabetes: the medical evidence

30. In order to assess the probability of such risks materialising, or the rationality of the risk assessment analysis offered by Sparks, Carstens and Mr Henry Rowen ('Rowen'), the respondent's expert witness on risk management, it is important first to consider the expert testimony on the nature, effect and treatment of diabetes. In this respect, as I have said, the court had the benefit of the evidence of South Africa's leading authority on diabetes, Prof Bonnici, who is also an accredited expert internationally.

31. Of the three medical experts who testified only Prof Bonnici has expert knowledge of the advances recently made in the field of diabetes. Drs Carstens and Woolley are both experts in occupational medicine and understandably approached the issue from that perspective. In assessing the occupational risk posed by diabetes they were compelled to rely on the specialist literature at their disposal, much of it, it would seem, somewhat dated. Prof Bonnici, on the other hand, as I have already said, is a leader in the field and proved through his erudition and entertaining delivery to be a most impressive witness.

32. Prof Bonnici is the immediate past Head of the Division of Diabetic Medicine in the Department of Medicine, University of Cape Town and Groote Schuur Hospital: a position he held over 20 years. He holds the qualifications MBChB, MMed, FCP (SA) and ADE. He has published and lectured extensively on endocrinology and diabetes. He is also the recipient of awards for outstanding service and leadership from the South African Diabetes Association, the International Society for Paediatric Adolescent Diabetes and the International Diabetes Federation ("IDF"). He was the head of the Paediatric and Adolescent Endocrine and Diabetes Unit, Groote Schuur and Red Cross War Memorial Children's Hospital, and has a Diabetes Unit named after him at the University of Cape Town. He has conducted clinical research in drug development on an ongoing basis in Endocrinology and Metabolism, and Type 1 and Type 2 diabetes. He has been actively involved in the development and evaluation of diabetes education among health care workers across the spectrum. He was the vice-president of the International

Diabetes Federation; an organisation, which has 145 country affiliates, from 1994 to 2000. He has been a member of the WHO Expert Advisory Panel (Diabetes) since 1997. He was president of the lay South African Diabetes Association from 1981 to 2004, and is presently their medical adviser. He is the founder member and immediate past president of the Pan African Diabetes Study Group, an advisory council member of the International Society for Paediatric and Adolescent Diabetes, a member of the Consultative Section on Diabetes of the International Diabetes Federation and has an impressive array of publications and conference presentations. As luck would have it, he has also been Stuart Murdoch's specialist physician for almost 20 years.

33. Prof Bonnici's evidence has value for more than one reason. Firstly, he was ideally placed to pronounce upon the nature and effects of diabetes. Secondly, his knowledge and involvement in clinical research in drug development allowed him to discourse on the implications and beneficial consequences of new pharmaceutical agents. And finally, because he has treated Murdoch for 20 years, he could provide the individual assessment, which Carstens had considered unnecessary in the light of the prevailing blanket ban.

34. In approaching Prof Bonnici's evidence I am mindful of the need to do so with some measure of caution. Prof Bonnici made no bones about his advocacy work in the field of diabetes and his fond regard for as well as his pride in Murdoch, who clearly has succeeded under his tutelage to become a model patient and optimally controlled diabetic. A mild taint of partisanship seems unavoidable in the circumstances. But this must be measured against Prof Bonnici's high calibre as a witness, a professional and a man of evident unimpeachable integrity. While ardent in his testimony, he remained courteous under sustained cross-examination, open to criticism, respectful of the views of his colleagues with whom he disagreed, but firm in his conviction to speak his mind about the truth of diabetes and society's need to move beyond prejudiced stereotypes. His evidence has been of invaluable assistance for the purposes of this decision.

35. Diabetes mellitus is a disorder of carbohydrate metabolism caused by insulin deficiency, which results in glucose or blood sugar disorder. A person with diabetes cannot control his or her blood glucose and he or she becomes hyperglycaemic, meaning that they have abnormally high levels of glucose in the blood. Hyperglycaemia on a sustained basis produces long-term adverse medical side effects. It is a complex metabolic syndrome, which can cause damage to body organs, particularly the kidneys and eyes. The most effective means of treating diabetes is through the subcutaneous administration of insulin by means of injections. Together with adjustments to diet and lifestyle, the intake of insulin enables a diabetic to control blood glucose levels throughout the day and night. Advances in pharmacology and technology

have made insulin injections more effective and easy to administer and control. The modern, more improved injections came in ball-point-pen type and size. They are easy and convenient to carry around and need not (unlike previous products) be kept in a refrigerator. Murdoch demonstrated their handy application for the benefit of the court.

36. Most diabetics, including Murdoch, use two types of insulin, namely fast acting and long acting. Fast acting insulin becomes effective immediately after an individual has injected himself and is used normally before meals. As eating will quickly elevate blood glucose levels, the fast acting insulin serves to reduce blood glucose to normal. The long acting insulin is intended to sustain the individual's needs for a longer period of time and is usually taken every 24 hours. Murdoch administers long acting insulin before retiring to bed in the evening.

37. There are two types of diabetes. Type 1 diabetes is a disorder of sugar metabolism in which the pancreas is no longer able to produce insulin. This is due to the destruction of the insulin producing beta cells of the pancreas by auto-immune process. Type 1 commonly develops before the age of 40, with peak incidence around 14 years. The aetiology of the condition is not fully understood, but may follow from a genetic pre-disposition. Type 1 diabetes cannot be prevented but it can be detected and controlled, and is normally treated by means of insulin injections. Long term complications can be well controlled by using a tight control regime in which blood glucose is measured several times each day and the insulin dose adjusted accordingly. The risk of complications can be minimised by training Type 1 diabetics to take proper care of their condition by monitoring their blood glucose levels all the time. If they are physically active, they usually will check their glucose level before and during any physical activity and use insulin and carbohydrates to achieve the appropriate level. Murdoch is a Type 1 diabetic.

38. Type 2 diabetes, on the other hand, is a disease in which the person develops resistance to and relative deficiency of the hormone insulin resulting in high blood glucose levels. It is the most common variety of diabetes, and is most prevalent in people over 40 who are overweight. It is often associated with high blood pressure and elevated levels of fat in the blood. Unlike Type 1 diabetes, Type 2 can often be prevented. Although it is not easy to control, the mainstay of treatment in Type 2 diabetes is lifestyle change, weight loss, a structured exercise programme and a low fat diet. However, in most people, even the correct diet along with exercise will eventually not be sufficient to control their blood glucose, accordingly drugs including insulin and agents to control blood pressure and high blood fats have to be used. Prof Bonnici speculated that in the not too distant future between 10-50% of the adult population over 50 will be affected with the illness - a telling indictment of modern lifestyles.

39. As indicated, the long-term complications of *hyperglycaemia* in diabetics are blindness, heart problems, strokes, amputations and kidney failure. However, the risk with which we are here concerned is not the effects of sustained *hyperglycaemia*; rather it is the dangers of a *hypoglycaemic* attack ("a hypo") within an occupational environment, especially a hazardous one. Hypoglycaemia occurs when blood glucose levels drop too low (between 2-4 mmols/l). All people can experience a hypo. They are caused routinely by the intake of too little carbohydrates (through missed meals), hot weather, too much exercise, the use of alcohol and too much insulin. Because the very purpose of insulin is to reduce blood glucose levels it poses an added risk of causing a hypo. Most people, diabetics and non-diabetics, have some awareness of the symptoms of a hypo. They include headaches, shaking or dizziness, anxiety, mood changes, sweating, palpitations, hunger, tingling lips or fingers, confusion, inability to concentrate and lack of co-ordination. Prof Bonnici likened the experience to that of pre-examination nerves. A mild hypo can be treated quickly by simply ingesting glucose tablets, soft sweets or slow acting carbohydrate such as a biscuit, sandwich, fruit or a glass of milk.

40. Beyond the normal discomfort brought on by a hypo, there are two areas of particular concern. When the blood glucose drops precipitously to a low level it may cause the sufferer to become unconscious. This is known as a "severe hypo", and as already explained, is defined medically to mean a hypo requiring the assistance or intervention of a third party, normally a friend, relative or colleague. The third party would have to administer glucose to the inert patient. The second problematic situation is where the sufferer has become afflicted with hypoglycaemic unawareness as a result of either very severe and frequent hypoglycaemic reactions or autonomic nerve damage. A person with hypoglycaemic unawareness is unable to recognise the symptoms of a hypo and will not take preventive action, leading to a loss of consciousness. Prof Bonnici testified that Type 1 diabetics typically recognize the body warnings when the blood glucose levels are falling and are quick to take preventive action. He stated also that hypoglycaemic unawareness is rare in Type 1 diabetics. Where it does occur, the patient needs special care and re-training by experts. He accepted that hypoglycaemic *unaware* diabetics should not drive or perform hazardous occupation.

41. On the basis of this general scheme, Prof Bonnici tendered the following opinion in relation to Murdoch's fitness to perform the functions of a firefighter. Murdoch is a Type 1 insulin dependent diabetic who uses a ballpoint type insulin injection and a portable glucose meter. He has had tight control of his diabetes since the age of 9. Having only experienced one severe hypo at the age of about 10-11, he has hypoglycaemic awareness. He checks his blood glucose level and injects himself with insulin at least four times per day (at mealtimes and before going to sleep). Apart from that he takes blood glucose readings before physical and strenuous activity and has regular snacks. He suffers no complications from his diabetes, with no evidence of micro vascular

disease or kidney problems. He regards Murdoch as highly motivated in his self-treatment and generous with his time and willingness to participate as a volunteer in several studies related to diabetes and the development of insulin. He described him as optimally controlled, and well educated in the management of his disease. He has known him since his childhood, saw him grow up into a strong and fit adolescent and believed he would encounter little difficulty in any physically demanding job, despite his diabetes. Hence, he was of the view that Murdoch was fit to perform firefighting functions.

42. Prof Bonnici's testimony and opinion was premised obviously on his understanding of diabetes, its different manifestations and the advances in treatment. This body of knowledge has led him to the conclusion that a blanket ban on diabetics entering the firefighting profession is not justified on the basis of the medical evidence and modern treatment modalities. During his testimony he was referred to a number of studies, medical literature and policy guidelines upon which he passed comment and made learned observations. The studies provide informative insight into the debate internationally.

43. As I understand his evidence and opinions, Prof Bonnici shares the views of HG Vaile and DA Pyke, the authors of the chapter "Diabetes mellitus and thyroid disorders" in RAF Cox *et al*: *Fitness for work: The Medical Aspects* ("Cox"). This text was canvassed with all the medical witnesses. Prof Bonnici confirmed his agreement with the following pertinent observation:

> Despite recent advances in the control of diabetes the condition remains poorly understood and it is sometimes feared by employers and even by their medical advisers. As a result, some diabetics still encounter unjustifiable difficulties in finding and keeping work because of their condition. There is a paucity of published scientific data on the work experience of diabetics in general or in particular situations, e.g. in shift work, but there under representation in the work place suggests that there is continuing prejudice against their employment. The risk of hypoglycaemia and visual impairment may legitimately debar *poorly controlled* insulin dependent diabetics from jobs where safety or vigorous physical effort is an important factor, but diabetics are not invalids and most can work normally and should not be discriminated against in job selection.

44. Later in the text the authors look at special work problems and the work records of diabetics. Their remarks in this regard are equally instructive. Thus, they say:

> There has been a great change in recent years concerning the employment of diabetics. Employers used to be frightened of diabetes and diabetics were frightened of employers. Both attitudes were due to ignorance. Now, the general public is better informed about diabetes, as about most other diseases. The result has been wholly beneficial; most employers realize that few occupations should be barred to diabetics. Diabetic employees are better able to manage their condition and less inclined to conceal their diabetes.
>
> Occupations closed to insulin-taking diabetics are those in which a sudden loss of

> control or consciousness would be dangerous e.g. airline pilots or large goods vehicle drivers. The risk here comes not from the diabetes itself but from its treatment leading to hypoglycaemia. It may be unwise for insulin-taking diabetics to work in jobs where the danger would not be to others but to themselves e.g., with moving machinery, in foundries, on scaffolding, and firefighting. *But even here there is room for latitude. Much depends on the exact nature of the work, control of the diabetes, in particular the frequency and abruptness of hypoglycaemic attacks, and the good sense of the patient.*

45. In their conclusions and recommendations the authors state:

> Although much progress has been made in improving employers' understanding of the problems of diabetics and the sickness record of well controlled diabetics is comparable to that of non diabetics, there is still some evidence of continuing employment prejudice against diabetics. Regrettably this seems to be due to lingering ignorance and fear of the condition among employers and their medical personnel. A continued effort is necessary to educate employers and persuade them to take a more objective view of diabetics…
>
> It is essential that each individual case be assessed on its merits with full consultation between all medical advisers. Diabetes *per se* should not limit employment prospects, because the majority of diabetics have few, if any, problems arising from the condition and make perfectly satisfactory employees in a wide variety of occupations.

46. Taking this perspective, Prof Bonnici was critical of the appraisal of diabetes contained in NFPA 1582 of the USA National Fire Protection Association. NFPA 1582 classifies medical conditions into categories A and B. A category A medical condition precludes a person from performing as a member in a training or emergency operational environment by presenting a significant risk to the safety and health of the person or others. A category B medical condition is a condition that, based on its severity or degree, could preclude a person from performing as a member in a training or emergency operational environment by presenting a significant risk to the safety and health of the person or others. Unpacked, category A conditions invite a blanket ban to entry, while category B conditions require individual assessment to determine whether a ban should apply to a particular individual. Under paragraph 6.18 of NFPA 1582, dealing with Endocrine and Metabolic Disorders, diabetes mellitus, which is treated with insulin and diabetes not treated by insulin, which is not controlled as evidenced by Haemoglobin AIC (Hbaic) measurement, are both category A conditions. Diabetes mellitus that is well controlled on diet; exercise and/or oral hypoglycaemic agents is classified as a category B medical condition.

47. Prof Bonnici rejected the premise in NFPA 1582 that a distinction should be drawn on the basis of treatment; arguing in effect that insulin taking diabetics are often better controlled than Type 2 diabetics who rely an oral agents and diet. With advances in analogue insulin and methods of injection he in actual fact favours the introduction of insulin to Type 2 diabetics earlier in their treatment, precisely to enable them to have better control. The idea that Type 2 diabetics on oral agents are better controlled and at lower risk is a

myth. The distinction is not scientifically sound, principally because it takes no account of the most relevant consideration in assessing the fitness of a diabetic, namely hypoglycaemic awareness. Indeed he went so far as to suggest that the opposite was true. Type 2 diabetics are probably at greater risk. They tend to be older, on less sophisticated medication and are not as well informed. Type 1 diabetics are better controlled, usually seek self-management training and have greater access to relevant updated information. Accordingly, in his view, the distinction in NFPA 1582 is neither rational nor justifiable.

48. Prof Bonnici took a similar view of the classification contained in Guideline No 12 of the South African Society of Occupational Medicine ("SASOM") of 1996 where the following is recorded:

> Diabetics controlled on diet or on diet oral agents are generally not prone to attacks of hypoglycaemia. They can therefore be safely employed in almost every situation exactly like a non-diabetic. They are not however allowed to become commercial airline pilots.
>
> Insulin dependent diabetics may be prone to hypoglycaemia but these attacks can be minimized with the help of a physician skilled in the management of diabetes.
>
> In general, insulin dependent diabetics should not be employed where they may inadvertently injure themselves or others in the event of a hypoglycaemia attack. They should not work on scaffolding, with heavy machinery or drive heavy-duty vehicles. They should not normally engage in underground mining or where easy access to food and medical help is denied. Insulin dependent diabetics should not normally work at heights i.e. in cranes or roofs. They should not work near open fires or furnaces or near high voltage installations. They should not work near unguarded moving machinery.

49. Again Prof Bonnici's assessment of the guideline was that it was unscientific because it failed to attach weight to considerations of greater relevance, namely the quality of control and the level of hypo-awareness. The proposition that diabetics controlled on diet, or on diet and oral agents, are generally not prone to hypoglycaemic attacks, he said, is simply scientifically incorrect. Once more the reverse is true. Those on oral agents may suffer more attacks, as they tend to be less controlled and more poorly managed. The distinction between insulin taking diabetics and those on oral agents is a false distinction or at least one of little predictive value. To the extent that the SASOM guideline advocates the individual assessment of diabetics for occupational reasons (although seemingly in conflict with its general proposition about diabetics), Prof Bonnici agreed. But the insulin/tablet dichotomy is merely a therapeutic distinction unrelated to the causative factors, the type of disease or metabolic control.

50. The categorisations in NFPA 1582 and the SASOM guidelines were thus founded upon anachronistic and false assumptions. The more correct position is that reflected in Cox and by the International Diabetes Federation Europe in

its report of August 2003: *Discrimination affecting people with diabetes in Europe – A survey of current status and initiatives*, where it is stated:

> Throughout Europe, political attitudes and legislation are reflecting a changing view, making discrimination unacceptable unless supported by convincing need (in which case it isn't discrimination). The reality of life with diabetes is also changing rapidly, particularly in the past 5 years. The nature of the condition, new medical treatments, and the more appropriate focus of care on the individual with diabetes are all more clearly understood and more widely implemented in Europe, to the benefit of those with the condition, their colleagues, friends and families. In particular, new insulins, a wider choice of oral medications, improved delivery systems and better glucose monitoring have enabled tight glucose control while *reducing* the risk of troublesome hypoglycaemia.

51. Prof Bonnici was furthermore referred to a report emanating from the office of the Deputy Prime Minister in the UK dated September 2004 titled: *Medical and Occupational Evidence for Recruitment and Retention in the Fire and Rescue Service,* which in Chapter 8 deals with endocrine disorders. The report recommends a specific policy shift and approach to the medical assessment of diabetics seeking employment as firefighters in the UK. It bemoans the fact that formulating guidelines for the safe employment of diabetics in the firefighting profession is difficult, as there is no directly relevant evidence-base. It draws instead however upon a study done in Scotland of Type 1 diabetic drivers that revealed a crash rate of 5.4 per 100,000 miles driven, compared with 9.5 in a comparative non-diabetic group. Other studies of drivers have shown no major discrepancy. The overall available evidence is then that there is no convincing excess of accidents amongst diabetic drivers on insulin treatment. Accidents due to hypoglycaemia do occur, but the report concluded that they are relatively infrequent and are presumably offset by the majority of diabetic drivers acting in a particularly careful and responsible manner. Prof Bonnici concurred with this conclusion, arguing that diabetics tend to be overly conscious of their condition and accordingly act more responsibly in relation to potential risk situations.

52. In the light of the evidence in relation to driving, the UK Government has accepted the position of Diabetes UK (a diabetics' interest group) and promotes a policy of individual evaluation for insulin treated diabetics being considered for potentially hazardous employment, including firefighting. It accordingly recommends the use of Diabetes UK's *Guidelines for Employment of Insulin-Treated Diabetic Persons in Potentially Hazardous Occupation*s which contain strict criteria, emphasising motivation and self-care. The criteria are accepted in the UK and include:

- Physical and mental fitness in accordance with non-diabetic standards.

- Diabetes should be under regular (at least annual) specialist

review.

- Diabetes should be under stable control.

- Diabetic persons should monitor their blood glucose and be well educated and motivated in diabetes self care.

- There should be no disabling hypoglycaemia and normal awareness of individual hypoglycaemic symptoms.

- There should be no advanced retinopathy or nephropathy, nor severe peripheral or autonomic neuropathy.

- There should be no significant coronary heart disease, peripheral vascular disease or cerebrovascular disease.

- Suitability for employment should be re-assessed annually by both an occupational and diabetes specialist physician.

53. The report then identifies specific coping strategies adopted by diabetic firefighters to minimize the risk of hypoglycaemic attacks and safely maintain a normal work pattern. The most common techniques and systems of self-care are:

- In depth knowledge of diabetes and self care strategies.

- Commitment and motivation.

- Frequent and sensible self blood glucose monitoring

- The ability to react appropriately to particular blood glucose levels.

- Multiple insulin injection treatment (4 times per day).

- Use of analogue insulin which reduce hypoglycaemic risks.

- Available supply of short acting and long acting carbohydrate food on person.

- Running high (in terms of blood glucose) on duty e.g. perhaps 4-10 mmol/l off duty, but 6-12 mmo1/l on duty.

- Taking carbohydrate food in the appliance on the way to an incident.

54. Both the criteria and the self-care techniques furnish occupational medical practitioners with the tools of assessment for application in evaluations of individual diabetics seeking employment in potentially hazardous occupations.

55. As already explained, what is strikingly noticeable about the assessments conducted by Drs Woolley and Carstens is that none of these tools of assessment were brought into play and hence considerations which one might have thought to be highly relevant were for all intents and purposes ignored. When Prof Bonnici was asked to comment on Woolley's report he observed that nothing in it referred to Murdoch's self-care techniques, his motivation and treatment regimen. Instead, he said, the occupational medical practitioners had simply labelled the condition and automatically excluded Murdoch from employment as a firefighter. He noted also that the report reflected no analysis or comment on how Murdoch had coped with his condition during his pervious experience while fighting fires. He similarly criticized Carstens' report, which more overtly recorded not doing an examination because of his application of the blanket ban. Accordingly, no assessment was made of Murdoch's blood levels or consideration given to his hypo-awareness, his access to regular specialist review, the absence of any organ damage and the lack of a history of disabling hypoglycaemia.

56. Carstens and Woolley offered some justification for the approach they took. Carstens in particular performs health risk assessments at workplaces and is often required to give recommendations to employers regarding an employee's ability to work from a medical perspective. This involves an assessment of the specific requirements relating to medical fitness and the general inherent requirements of the job in order to qualify the risks and hazards and the probability of an adverse factor having an adverse impact. For this purpose he applies risk-rating tools usually employed by risk management advisers (such as Mr. Rowen, whose evidence I discuss later), though he readily acknowledged that epidemiological evidence-based tools are invariably more reliable. Normally when assessing the risks imposed by employment, in line with the approach in Cox, an individual assessment is required. An exception to this, he felt, is when the nature and extent of the impairment is known and where the specific requirements of the job automatically exclude employment of a person with an impairment of that nature and extent. The occupational medicine practitioner then simply verifies the condition and recommends non-employment of that person. An obvious example would be where a blind person is considered not fit to drive a car. The function of the occupational medicine practitioner would be to ratify the blindness and to recommend non-employment. There is no need to investigate the specific history and circumstances, or to do an individual assessment, because a blanket ban applies. In Carstens' opinion the employment of an insulin dependent diabetic as a firefighter falls into this category. Consequently, he saw his function as limited to verifying Murdoch's insulin dependent diabetes and then recommending non-employment, which

he did.

Although he somewhat contradictorily accepted Cox's individual assessment approach, Carstens believed the blanket ban was appropriate because of the unpredictability of the hypoglycaemic effects of decreased blood glucose level possibly occasioned by insulin intake. While he accepted the risk was less in well controlled diabetics, and that it could be further minimized by "running high" (i.e. eating sufficient glucose before attending an incident) he still considered there to be a real risk, principally because a firefighter is not always in a position to take supplements while fighting a fire. This, he felt, yielded an unacceptable risk of employee failure in a critical situation which could endanger the health and safety of the employee and others.

57. In support of his conclusions, Carstens referred the Diabetes Control and Complications Trial (DCCT), a study conducted in the USA during the 1980's describing the epidemiology of severe hypoglycaemia and identifying patient characteristics or behaviour associated with severe hypoglycaemia in patients with insulin dependent diabetes. The study claims to have demonstrated that intensive therapy, with the aim of achieving glucose levels as close to the non-diabetic range as possible, was accompanied by a threefold increase in severe hypoglycaemia compared with conventional therapy and that there was a high incidence of severe hypoglycaemia occurring without apparent warning symptoms, as some diabetics lose their hypo awareness. Prof Bonnici, in his evidence, expressed reservations about this study, which he regarded as dated, saying also that many in the international diabetes community have raised ethical questions about it. The message that greater control causes more hypoglycaemia has not been translated into the international guidelines, particularly in Europe and Scandinavia, where the view remains that the intensification of control prevents hypoglycaemia. The study's reliability is open to debate also because it relied on old types of insulin rather than the recent analogue insulin, which has proven more effective and less prone to producing hypoglycaemia.

58. While Carstens readily admitted to not being an expert in diabetes, he remained convinced, despite Prof Bonnici's evidence, that Type 2 diabetics dependent on diet control and oral agents were at less risk of hypoglycaemia, saying that there was no overwhelming evidence to the contrary. Still, he acknowledged that he had not evaluated Murdoch's level of hypo awareness, nor did he take account of the fact that in 13 years of firefighting Murdoch had never had to deal with the onset of hypoglycaemia during an incident which required him to ingest glucose as a preventative. Furthermore, he was unaware that Murdoch had not had a severe hypo in 20 years, or that his only severe hypo was as a 10 years old child at the early stages of the disease, prior to his being introduced to a tight control regimen. As I have explained, he considered these matters irrelevant because of the blanket ban. He held likewise in relation to other aspects of Murdoch's individual experience and

attached no weight to the fact that Murdoch was subject to regular reviews by the Diabetes Unit at UCT, that he had stable control, was highly motivated, educated in self-care and had no organ damage or vascular diseases. Nor was he particularly influenced in his opinion by Prof Bonnici's evidence that modern developments in insulin therapy and self-management justified a revision of prevailing attitudes and that this had been accomplished in the United Kingdom. He was adamant that his judgement still held and that even today he would not advise the employer to employ a diabetic firefighter despite the revised UK guidelines. In his view there was not enough epidemiological evidence to justify a change in the blanket ban. Yet ultimately he was compelled to concede that firefighters in employment developing Type 2 diabetes, obesity, asthma or heart problems could pose a risk at least equal to that of a Type 1 diabetic and that the respondent had no policy to detect the onset of such medical conditions, to assess them or manage them by means of a blanket ban or otherwise.

59. Woolley's support of the blanket ban was much in line with Carstens' view. He too accepted that individual assessments should be the norm but that some conditions justify a blanket ban. The fact that Murdoch was optimally controlled and that modern developments indicated a shift in policy and prevailing attitudes did not sway his opinion that there was an undisputed risk of hypoglycaemia with potentially disastrous consequences for the employer.

60. Woolley was influenced in his decision to recommend non-employment by a study conducted at the Joslin Clinic by Bhatia and Wolfsdorf, referred to in NFPA 1582, involving the assessment of 196 insulin dependent adolescents and in which all of them experienced hypoglycaemia at least once during the 2-year observation period. Of these 15 percent were classified as severe, based on loss of consciousness, seizure, or the clinical need for therapeutic glucagons or intravenous glucose. It was of particular concern to him that 24 percent of the hypoglycaemic episodes detected by blood glucose monitoring were not apparent to the patients. Thus Woolley concluded that about a quarter of Type 1 diabetics were in danger of being hypo-unaware and this alone justified the blanket ban. This approach stands in contrast to Prof Bonnici's view that hypo-awareness should be assessed individually with reference to the personal history of the patient. Like Carstens though, Woolley accepted that there was merit in Cox's view that well controlled diabetics should not be automatically debarred. Nevertheless, puzzlingly, in his assessment of Murdoch he too attached no weight to his personal history, his hypo-awareness, access to regular review etc.

61. Woolley further conceded that the Joslin Clinic study was dated and besides indicated that 76 percent of the participants were indeed able to detect the onset of the symptoms of mild hypoglycaemia and as such the study seemed to support an individualized approach aimed at detecting a job applicant's level of hypo-awareness.

62. Carstens and Woolley both agreed that had an individual assessment been done in accordance with the UK Guidelines, Murdoch would have qualified for employment as a firefighter. Prof Bonnici's testimony in this regard stands unchallenged. To sum it up: Murdoch comes from a stable family unit with parents highly motivated to support him in his illness, he is well educated about his illness, he has access to the best diabetes research unit on the continent, he participates regularly in clinical trials and experiments, he regularly monitors his blood glucose levels using the best innovative techniques, he uses insulin intelligently adapting his dosage to his immediate circumstances, thus avoiding the danger of fixed doses, he has no history of disabling hypoglycaemia, there is no organ or vascular disease and he uses the best analogue insulin.

63. The medical evidence reveals that modern advances point towards a different approach to the employment of diabetics in hazardous occupations. Those on the cutting edge, like Prof Bonnici, regard the fears of employers as over cautious and unnecessarily restrictive. Occupational medical practitioners, on the other hand, are less influenced by the grievances of diabetics. They argue, albeit regretfully, that diabetics' rights should yield to the employer's duty to provide safe working environments in the interests of the public and its employees. They believe that individualized assessments can only ever mitigate the risks associated with employing diabetics in potentially hazardous occupations. The advantage of a blanket ban, properly conceived and consistently applied, is that it removes the risk entirely. This leads to the question of what precisely is the risk against which the employer needs to guard: how probable is its materialization quantitatively and what is the legitimate and proportional evasive response to it?

The risk assessment

64. Looked at precisely, the risk facing an employer who employs a diabetic firefighter is in essence that the firefighter under the strenuous conditions of fighting a fire may suffer a severe hypo (requiring third party intervention) resulting in injury to himself, his colleagues or members of the public. How real, probable or fanciful is such a risk in the light of advances in medicine and techniques of self-care and coping strategies, looked at not only in general but also taking into account the personal history of an applicant for employment?

65. All the medical experts accepted there was indeed some risk. Even Prof Bonnici conceded that there is always the possibility of a hypo. But, as he saw it, health problems always pose risks in any employment scenario. For instance, he reminded us, President Kennedy suffered from Addison's disease. Even young, apparently healthy persons can experience sudden and unanticipated strokes, embolisms, or seizures. Asthmatics have been known to have such severe attacks that they lose consciousness or even die. In his

view, there is simply no feasible or fair way to restrict employment to individuals who will never have a calamitous health incident while on duty. Whether health risks materialize is determined primarily by the parameters of control. A neglectful, poorly controlled diabetic is at greater risk than an optimally controlled one. Likewise a hypo-aware, optimally controlled Type 1 diabetic is at less risk than an undiagnosed or poorly managed Type 2 diabetic.

66. Sparks, the former Chief Fire Officer, described the possible risks on the fire ground most graphically. As stated earlier, he saw the dangers as most acute in fighting ship fires, fires in high rise buildings and hazardous material incidents, especially when the firefighter would need to wear breathing apparatus or a hazardous materials suit ("hazmat suit") for a prolonged period, or when operating a charged hose line. All these would lead to high levels of perspiration, excessive physical exertion and less ability to detect hypoglycaemia and to treat it by popping a glucose tablet into the mouth. At this point, I pause to recall that the antidote to a hypo attack is merely the ingestion of a sweet or some glucose. Still, Sparks contended that there was no guarantee that a firefighter would remember to keep glucose on his person. But even assuming he or she did have glucose, the exigencies of the situation might prevent its ingestion, for instance where it would be dangerous to remove the breathing apparatus or a glove, where it is impossible while wearing a hazmat suit, where the firefighter was trapped, while he was on a turntable ladder or where taking glucose out of his pocket would cause him to lose control of a charged hose. There are, in other words, many situations in which a firefighter would have no hands available or would lack the opportunity to administer the intake of glucose. Moreover, toxic substances might pollute the glucose itself or it might be dropped in the heat of the moment. In short, the peculiar difficulties of firefighting might make the ingestion of glucose impossible leading to a real risk of a severe hypo attack with the resultant danger enhanced by the hazardous environment.

67. The evidence of Murdoch and Hoy, referred to earlier, reveals some of these legitimate concerns to be a little fanciful. In 13 years of firefighting Murdoch has always carried liquid glucose ("glucogel") in his tunic with the purpose of being able to counter the onset of hypoglycaemia by squirting it into his mouth if necessary. In all those years he has never needed to use it. He has worked long shifts of up to 34 hours without incident. Meals have always been available to him during his shifts, but he takes the added precaution of storing his own food on the fire engine. He has from time to time been required to use breathing apparatus, but pointed out that standard procedure limited the use of breathing apparatus to 45 minutes and that he was able to ensure that his blood glucose levels run high for that period, if not longer. He admitted to not having used a hazmat suit and conceded that administering glucose while wearing one would be difficult, if not impossible. However, he explained that if he ever had to use one he would before

donning it simply elevate his blood glucose (by ingesting glucose and immediately testing) to a level sufficient to avert any risk of hypoglycaemia. In other words, to use the language of the UK Guidelines, he would “run high” for the appropriate period. Here we see the significance of self-care by well educated, optimally controlled diabetics. In the past, diabetics were at greater risk because they applied fixed doses of insulin. Today, because of short acting, analogue insulin and portable testing equipment, diabetics are able to adjust blood glucose levels to deal with the exigencies of a particular situation. That is why in 13 years Murdoch has never experienced a hypo on the job or had to leave the scene of an accident. Running high is thus a feasible option in all situations where the ingestion of glucose may prove problematic. The concern about handling charged hoses is diminished by the fact that many have shut-off valves at the nozzle, which can be done momentarily for the purpose of ingesting glucose.

68. Hoy, as mentioned, is a UK based firefighter with diabetes and the founder of *The International Register of Firefighters with Type 1 Diabetes*. The purpose of the register is to show how firefighters with Type 1 diabetes cope with their illness in their work environment. He has been a firefighter since 1985 and was diagnosed as a Type 1 diabetic in early 1987. Since then he has performed all the tasks of a firefighter and currently holds rank as a Station Commander in London. Like Murdoch, he is an optimally controlled, educated diabetic. There are 200 firefighters on the register, 72 in the UK, who have clocked up 700 person years without a severe hypo – a fact born out to some degree by no witness being able to testify to having encountered any report or record of an incident or injury arising from a firefighter suffering a severe hypo while fighting a fire. Hoy too has never experienced a hypo while on duty and has never had a severe hypo on duty or otherwise. He too will occasionally run high while on duty.

69. During his testimony, Sparks provided statistics on firefighter injuries while attending emergency incidents in Cape Town. In the three years between 2002 and 2005 there were 102994 emergency calls, 169 injuries at emergency calls and 63 injuries whilst performing station duties and training. There were no fatalities on duty. During that time there were 850 firefighters employed in Cape Town. This injury rate is commendably low. Expressed as an injury percentage of emergency incidents it translates as an injury rate of 0,16%. Expressed as injuries per fireman it indicates one injury per fireman every 5 years. These statistics may be interpreted to mean that firefighting is less hazardous than one might otherwise assume. More likely, it reflects a laudable professional standard, a high level of safety awareness in the Cape Town fire service and that the hazardous environment is in the main well managed, and therefore generally less risky.

70. This brings me to Rowen’s evidence. He is a consultant with 44 years experience in risk management. He too has impressive credentials. He

defined risk as the presence of uncertainty, measured as the variation from the expected outcome of a given situation. Risk assessment involves identifying the elements of risk and establishing whether or not the elements are significant. Significance can be quantified on a scale of 1 to 5, 1 to 10 or 1 to 100. One looks at the probability of occurrence and measures this against the likely severity of the outcome. He testified that it is impossible to use an exact numerical yardstick of measurement of probability in the case of an insulin dependent diabetic firefighter being injured at a firefighting incident as there can be no assessment prior to the event of the permutation of circumstances which could lead to a hypoglycaemia attack coupled with circumstances in which this could lead to severe injury or death. However, he relied on a risk-rating tool, which applied numerical values to three factors: the probability of an incident where the event occurs ("likelihood"), the frequency of occurrence of the event ("exposure") and the consequence. In assessing the risk of a severe hypo on the fire ground causing injury or death, Rowen pegged its likelihood as "conceivable, but very unlikely (hasn't happened yet)" with a corresponding value of 0,5 out of 10; its exposure as "continuous" with a value of 10 out of 10; and its consequences as "very serious" with a value of 15 out of 100. This generated a risk score of 75 (0,5 x 10 x 15) leading to a risk classification of "substantial risk: correction needed". This then required the removal of the risk and the best way to achieve that was a blanket ban on the employment of diabetics as firefighters.

71. Speaking frankly, I am not overly impressed with the scientific quality of this risk assessment method. Undoubtedly it can be applied helpfully in business planning. But it is of dubious validity in the justification of discrimination impacting upon the dignity and identify of a class of individuals in society. It relies too easily on generalized assumptions, and in this particular case attaches little significance to the critical factors of Murdoch's optimal control and hypo-awareness or the possibility that his personal history might be the best predictor of future experience. Were one justifiably to adjust the exposure factor from "continuous" to "frequent", on the basis that Murdoch always has glucose with him, runs high at incidents and is optimally hypo-aware, the risk classification would be significantly affected. The value of frequent exposure being pegged at 6 out of 10, the risk score would be 45 (0,5 x 6 x 15) resulting in a classification of "possible risk". Likewise the risk of an overweight firefighter having a heart attack could be assessed as "quite possible" (6), "unusual" (2) and "very serious" (15) leading to a risk score of 180 (6 x 2 x 15) bringing it close to the high risk classification justifying a blanket ban on hefty firefighters.

72. Accordingly, while I am certain the risk-rating tool has its valuable uses, I am loath to place much value on it for present purposes. In any event, Rowen acknowledged that the statistics drawn from the International Register pointed to the risk being minimal.

73. The proposition that the risk of a severe hypo on the fire ground is at acceptable levels is supported by the shifts in policy witnessed in other countries, particularly in Europe. The epidemiological study relating to diabetic drivers in Scotland, referred to in the report emanating from the office of the UK Deputy Prime Minister, is probably the best (and perhaps only reliable) indicator that there is no convincing excess of accidents among insulin dependent diabetics. The International Diabetes Federation Survey of August 2003 records that of 12 European countries surveyed 5 did not impose a blanket ban on fire officers. At that time, the UK was one of the 7 imposing a ban. As Hoy explained in his testimony, with the acceptance of the Diabetes UK Guidelines, that ban was lifted in 2004, meaning that of the 12 surveyed European countries, 6 do not impose a ban.

74. Courts in other jurisdictions, by upholding a requirement of individual assessments, have gauged the risks posed by diabetes in potentially hazardous occupations as not warranting blanket bans. For instance, in ***Bombrys v City of Toledo*** **849 F.Supp.1210,** the City of Toledo was permanently enjoined by the US Federal Court from implementing a blanket exclusion for persons with insulin dependent diabetes from employment as police officers. In weighing up the risks, the court @ para 14 noted:

> This court does not intend to belittle the very real concerns of the City of Toledo. Were Mr Bombrys in an emergency situation, he may not have the time to monitor his blood sugar. If he were to experience a drop in his blood sugar level, he may not have the opportunity to ingest food or glucose. This court recognises that, if Mr Bombrys were to become incapacitated while involved in an emergency situation, the consequences to him and to those around him could be tragic. However, this court also recognises that officers become incapacitated for reasons other than insulin dependent diabetes. There are police officers currently on the force who are overweight and run the risk of heart attacks. Even young, presumably healthy persons have been known to have sudden and unexpected strokes, embolisms, or seizures. Asthmatics have been known to have such severe attacks that they lose consciousness or even die. There is simply no viable or fair way to restrict a police force to individuals who will never have a catastrophic health incident while on duty. The best that the City of Toledo can do is to evaluate each police officer candidate on a case-by-case basis and determine what risks that individual presents to him/herself and the public. An individual's medical history and record of compliance with physician's recommendations seem to be an ideal place to begin such an evaluation. In short, before the City may determine that an individual poses a threat to the health of safety of others, it must develop and apply an evaluation process that will comply with the three mandates of the [Americans with Disabilities Act] … An individualised assessment is absolutely necessary if persons with disabilities are to be protected from unfair and inaccurate stereotypes and prejudices.

75. Similarly, in ***Kapche v City of San Antonio*** **304 F 3d 493 (2002),** the Court of Appeals held that an individualised investigation of the plaintiff's ability to perform the job was required. In that case, the City had deemed the plaintiff ineligible for a police officer position due to his insulin dependent diabetes. The Court of Appeals reiterated its earlier position in ***Chandler v City of Dallas*** **511 US 1011** that:

> "We nonetheless share the hope…..that medical science will soon progress to the point that 'exclusions on a case-by-case basis will be the only permissible procedure; or, hopefully, methods of control may become so exact that insulin dependent diabetics will present no risk of ever having a severe hypoglycaemic episode."

In the interim, however, the court held that an individualised assessment of the applicant's present ability to safely perform the essential functions of a police officer was required.

76. The Canadian courts have shown similar resolve and preference for individualised assessments. In ***Nowell v Canadian National Railway Ltd*** **[1987] DLQ 8** the complainant lodged a complaint against the respondent under the provisions of the Canadian Human Rights Act, alleging that the respondent's policy of excluding insulin dependent diabetics from the position of trainman was a discriminatory practice. The Canadian Human Rights Tribunal pointed out that there is a difference between an occupational requirement which sets down a particular working condition (i.e. wearing a certain piece of equipment on the job) that applies to all employees and an occupational requirement which excludes a whole group of individuals from a particular job because of a certain physical disability. It held @ para 33:

> Where the occupational requirement excludes a whole class of individuals with varying degrees of disability within the class (according to the medical evidence) there should be, in the interests of fairness and justice, individual assessment within the group that is excluded to determine if there is sufficiency of risk to justify the exclusion of that particular employee from the job.

Nowell, an insulin dependent diabetic was held not to pose a sufficient risk of employee failure to justify his exclusion from the position of trainman and he was awarded damages. The tribunal's comments in assessing the putative risk of Nowell having a hypoglycaemic episode are especially relevant:

> The sufficiency of risk was not proved in this case. There was no evidence of the likelihood of Mr Nowell's suffering an incapacitating reaction because of his diabetes. In fact, the evidence was to the contrary. In 15 years as a diabetic, he has never suffered an incapacitating reaction. He is a well-controlled diabetic who is physically fit to do the job of trainman.

77. Similarly, in ***McKenzie v Quintette Coal Ltd*** **(1986) 8 CHRR D/3762 (BCCHR)**, the British Columbia Human Rights Council found that Quintette Coal Ltd discriminated against McKenzie when it refused to hire him as a miner because he was an insulin dependent diabetic. McKenzie's evidence and expert testimony indicated that McKenzie's diabetes was stable and well controlled and that the harsh environmental conditions and long hours under which miners worked posed no greater risk to McKenzie than to non-diabetic workers. The following remarks of the tribunal are especially apposite:

> Human rights legislation seeks to create equal opportunity in competition for jobs.

> Some risk of injury exists in all jobs and to deny a disabled person an opportunity solely because of a perceived risk to the individual defeats the purpose of the legislation.

The tribunal found that McKenzie had learned to live with his diabetes without experiencing significant problems. His jobs had involved long hours and often extended and changing shifts. He had experienced no difficulty with his diabetes and had never lost consciousness, required assistance, had to leave work or taken time off for any illness or injury. The tribunal found the respondent's blanket policy of refusing to employ insulin dependent diabetics as miners was not a bona fide occupational requirement. Additionally, the respondent's decision not to employ McKenzie was not based on an individual assessment that was objectively related to the performance of the employment concerned.

The discrimination analysis

78. In South Africa the matter has to be determined within the framework of section 6 of the EEA. Section 6(1) reads:

> No person may unfairly discriminate, directly or indirectly, against an employee in any employment policy and practice, on one or more grounds, including race, gender, sex, pregnancy, marital status, family responsibility, ethnic or social origin, colour, sexual orientation, age, disability, religion, HIV status, conscience, belief, political opinion, culture, language and birth.

79. Section 6(2)(b) provides as a defence that it is not unfair discrimination to distinguish, exclude or prefer any person on the basis of an inherent requirement of a job. Moreover, section 11 of the EEA provides that whenever unfair discrimination is alleged, the employer against whom the allegation is made must establish that it is fair. This in effect creates a rebuttable presumption that once discrimination is shown to exist by the applicant it is assumed to be unfair and the employer must justify it- *Jooste v Score Supermarket Trading (Pty) Ltd (Minister of Labour Intervening)* 1999 (2) SA 1 (CC); and *Hoffmann v South African Airways* 2000 (2) SA 628 (W). Once discrimination has been established, the employer will have to prove that the discrimination was fair or have to justify the discrimination as justifiable under section 6(2)(b). It is common cause that it is the respondent's employment policy or practice not to employ insulin dependent diabetics as firefighters. The question, therefore, is whether that constitutes unfair discrimination.

80. The approach to unfair discrimination to be followed by our courts has been spelt out in *Harksen v Lane NO and Others* 1998 (1) SA 300 (CC). Although the *Harksen* decision concerned a claim under section 9 of the Constitution (the equality clause), there is no reason why the same or a similar approach should not be followed under the EEA.

81. The *Harksen* approach contains a specific methodology for determining

discrimination cases. The first enquiry is whether the provision differentiates between people or categories of people. If so, does the differentiation bear a rational connection to a legitimate governmental purpose? If it does not, then there is a violation of the guarantee of equality. Even if it does bear a rational connection, it might nevertheless amount to discrimination. The second leg of the enquiry asks whether the differentiation amounts to unfair discrimination. This requires a two-staged analysis. Firstly, does the differentiation amount to "discrimination"? If it is on a specified ground, then discrimination will have been established. If it is not on a specified ground, then whether or not there was discrimination would depend upon whether, objectively, the ground was based on attributes and characteristics which had the potential to impair the fundamental human dignity of persons as human beings or to affect them adversely in a comparably serious manner. Secondly, if the differentiation amounted to "discrimination", did it amount to "unfair discrimination"? If it is found to have been on a specified ground, unfairness will be presumed under the Bill of Rights by virtue of the provisions of section 9(5) of the Constitution, which transfers the onus to prove unfairness to the complainant who alleges discrimination on analogous grounds. As I read section 11 of the EEA, no similar transfer of onus arises under the EEA. In other words, whether the ground is specified or not the onus remains on the respondent throughout to prove fairness once discrimination is shown. In the context of the EEA section 6(2)(b) also permits justification on the basis of an inherent requirement of a job, in which event the discrimination is deemed not to be unfair. The onus in this respect is also on the employer.

82. The impact of the discrimination complained of on the complainant is generally the determining factor regarding the unfairness of alleged discrimination. Factors which must be taken into account include: the position of the complainants in society and whether they have suffered in the past from patterns of disadvantage; the nature of the provision or power and the purpose sought to be achieved by it; the extent to which the discrimination has affected the rights or interests of complainants and whether it has led to an impairment of their fundamental human dignity or constitutes an impairment of a comparably serious nature.

83. In the pre-trial minute the respondent admits differentiating between Murdoch and other persons in an employment policy or practice on the basis that he is an insulin dependent diabetic. However, it avers that its differentiation bears a rational connection to a legitimate government purpose. As a local authority the respondent bears a duty to provide fire protection services in terms of section 155(6)(a) and (7) read with Part B of Schedule 4 of the Constitution, read also with the provisions of the Fire Brigade Services Act 99 of 1987. The respondent also has a duty in terms of section 8 of the Occupational Health and Safety Act 85 of 1993 ("OHSA") to provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of its employees. Section 9 of OHSA

creates the same duty on the employer in respect of third parties. In deciding what is “reasonably practicable” the employer must have regard to amongst other things the severity and scope of the hazard or risk concerned; the state of knowledge reasonably available concerning that hazard or risk and of any means of removing or mitigating that hazard or risk and the availability and suitability of means to remove or mitigate that hazard or risk.

84. As under the common law, therefore, the respondent must take reasonable steps to prevent reasonably foreseeable harm. If it does not, it could be sued in delict for damages sustained by third parties under section 9 as well as the common law, and could face a claim for increased compensation from the employee under the Compensation for Occupational Injuries and Diseases Act 130 of 1993.

85. Government’s imposition of these duties on employers and local authorities aim at the protection of the community and advance the public interest. I accordingly accept that the purpose of the respondent in imposing the ban on the employment of Type 1 diabetics as firefighters was one of ensuring public safety and limiting public liability.

86. Much of the documentary evidence reveals that blanket bans against insulin dependent diabetics becoming firefighters have been customary elsewhere, and the respondent’s medical and risk advisers considered these before making their recommendations. Bans were recommended by the United Kingdom’s Home Office (prior to 1 October 2004); the United States National Fire Prevention Agency (“NFPA”), the Queensland Fire and Rescue Authority in Australia, and, as we have seen, were imposed by at least 6 of 12 European countries surveyed by the IDF. It is a matter on which reasonable people may differ, meaning in the final analysis that a ban is not entirely beyond rationality. Prof. Bonnici also confirmed that in the past insulin dependence carried a high risk of hypoglycaemia due to the nature of the treatment, particularly before the invention of fast-acting insulins. The history of the blanket ban against Type 1 diabetics therefore comes not so much from unfair prejudice against people with diabetes, but from the factual history of treatment of diabetics dependent on insulin. In the past there was a real risk of hypoglycaemia. Although the respondent concedes that insulin treatments have improved and have reduced the risk, there are, in its view, insufficient statistics or clinical trials to show the extent to which the risks have been reduced. In the absence of evidence to the contrary, Mr Kantor, who appeared for the respondent, submitted that government agencies act reasonably in adopting a risk-averse approach.

87. The differentiation, as such, can be seen as a legitimate method of guaranteeing public safety and certainly bears a rational relationship to that objective. At this stage of the enquiry the question is not whether the government may have achieved its purposes more effectively in a different

manner, or whether its regulation or conduct could have been more closely connected to its purposes. The test is simply whether there is a reason for the differentiation that is rationally connected to a legitimate government purpose - *East Zulu Motors (Pty) Ltd v Empangeni/Ngwelezane Transitional Local Council and Others* 1998 (2) SA 61 (CC) @ 73 C-D. The respondent has a legitimate government purpose in taking steps to reduce the risk of harm to employees in its fire service. Nor has it been suggested by the applicants that the respondent's purpose, to ensure public safety, is not legitimate. In the premises, I accept that the respondent's differentiation bears a rational connection to a legitimate government purpose and is therefore mere differentiation and not *per se* a violation of the right not to be unfairly discriminated against. Had it been otherwise the matter would have been resolved in favour of Murdoch on that basis alone.

89. The next leg of the inquiry invites consideration of whether the differentiation is on a specified or listed ground. If it is, it will be discrimination and can be presumed unfair. If not, the respondent contends that the applicants will bear the burden not only of proving it is on an analogous ground but also that it is unfair. As I have indicated, I doubt whether the shift of the burden applies in the context of the EEA. The shift of the burden in constitutional cases is the result of the unambiguous language of section 9(5) of the Constitution which provides expressly that discrimination on one or more of the grounds listed in section 9(3) of the Constitution is unfair unless it is established that the discrimination is fair. No similar provision exists in the EEA. Nevertheless, it is still necessary to determine whether there has been differentiation on a ground specified in section 6(1) of the EEA, namely "disability", or whether the applicant has established his medical condition to be an analogous ground. It must be kept in mind that the list of specified grounds in section 6(1) is not exhaustive, and in so far as the onus was on the applicant to prove discrimination, he needed to persuade the court that his medical condition constitutes a ground contemplated within the scope of the prohibition.

90. The word "disability" is not defined in the EEA, but item 5 of the *Code of Good Practice: Key Aspects on the Employment of People with Disabilities*, enacted in terms of the EEA, defines "people with disabilities" as "people who have a long term or recurring physical or mental impairment which substantially limits their prospects of entry into, or advancement in, employment". Item 5 commences with the following statement in item 5.1:

> The scope of protection for people with disabilities in employment focuses on the effect of a disability on the person in relation to the working environment, and not on the diagnosis or the impairment.

The definition is therefore not based on the medical model of disability but rather on the effect the impairment has in limiting the complainant's entry into, or advancement in, employment. (Dupper *et al: Essential Discrimination Law*

Juta 2004, 60 @163; Thompson and Benjamin CC 1-47.)

91. Prof Bonnici testified that Type 1 diabetes is a long-term physical impairment. There is no cure for it and it is a lifetime disease. People who suffer from Type 1 diabetes are dependent on insulin that has to be self-administered or administered by others, for the rest of their lives. They cannot function without it; in fact, if they are not given insulin, they will die. There is, therefore, no doubt that it is a long-term physical impairment. The respondent's expert witness, Dr Carstens, confirmed this. However, in my opinion, the matter does not end there. Item 5.1 requires that before being classified as a person with disabilities, an applicant must satisfy all the criteria in the definition. Hence, in addition to showing a long-term physical impairment, the applicants need to show that such substantially limits Murdoch's prospects of entry into or advancement in employment. In terms of item 5.1.3(i) an impairment is substantially limiting if, in its nature, duration or effects, it substantially limits the person's ability to perform the essential functions of the job for which they are being considered. Additionally, items 5.1.3(ii) and (iii) give important content to the term "substantially limiting". They provide:

> (ii) Some impairments are so easily controlled, corrected or lessened, that they have no limiting effects. For example, a person who wears spectacles or contact lenses does not have a disability unless even with spectacles or contact lenses the person's vision is substantially impaired.
>
> (iii) An assessment to determine whether the effects of an impairment are substantially limiting, must consider if medical treatment or other devices would control or correct the impairment so that its adverse effects are prevented or removed.

89. I am of the view, especially in the light of Prof Bonnici's evidence, that fast acting, analogue insulin controls or corrects the long term physical impairment, diabetes mellitus, so that its adverse effects in relation to the working environment are largely prevented or removed. Indeed, that is the applicants' case. It must follow that although diabetes mellitus can be accurately described as a long-term impairment, in our law, a sufferer of it is not regarded as a person with a disability under the EEA. Murdoch lives a normal life apart from his medication regime, and there is no substantial limitation of his abilities to carry out tasks. He does therefore not fall within the definition of "people with disabilities" in the Code of Good Practice. The respondent for that reason did not differentiate on the listed ground of disability within the meaning of that term in section 6(1) of the EEA. My finding in this regard, I would venture, accords with the view taken by diabetics of themselves. Many surely would prefer not to be stigmatised by the brand "disabled". A similar conclusion was reached by the US Supreme Court in ***Sutton v United Airlines Inc*** **527 US 471 (1999)** which held that the determination of whether an individual is disabled under the ADA Disability Standard requires consideration of the individual's impairment in its mitigated,

or medicated state.

90. Absent proof of differentiation on a listed ground, the applicants were burdened to prove that the ground of differentiation is based on attributes and characteristics having the potential to impair Murdoch's dignity or to affect him adversely in a comparably serious manner as to amount to discrimination. I am satisfied that Type 1 diabetes is an analogous ground to the listed grounds of disability, HIV status and, given its genetic origins, perhaps even birth. Controlled diabetics seek dignity with the demand that their capacity to function as normal members of society now be recognised to the extent that modern pharmacological and technical advances make that possible. Arbitrary, irrational and unfair exclusions predicated upon anachronistic generalised assumptions impair their dignity and seriously affect them adversely by limiting the full enjoyment of the right, guaranteed by section 22 of the Constitution, to pursue a chosen trade, occupation or profession. Accordingly, the respondent's differentiation does indeed amount to discrimination, and in terms of section 11 of the EEA, the respondent must establish that it is fair.

91. Various factors should be considered in making the determination of unfairness or otherwise. They include the position of the complainant in society; the nature of the practice or policy and the purpose sought to be achieved by it; and the extent to which discrimination has affected the rights of the complainant and to which it has led to an impairment of his fundamental dignity - ***Harksen @*** **para 51.**

92. The respondent has countered the applicants' arguments of unfairness with a number of submissions aimed at legitimating its policy and conduct. In the first place it contends that the impact on Murdoch was not severe: he was not seconded to a lower post; his current employment prospects are unaffected; he is left in a job where the risk of danger arising from a hypoglycaemic episode at work is lower; the long terms health prospects are better in his present job, given that he will not be doing 24-hour shift work where he keeps his blood sugar level elevated for one third of his time, which is likely to raise his Hbaic levels. In addition he may not be able to progress up the ranks if he declined hazardous materials course training or is barred from driving the fire apparatus on account of his diabetes. The respondent recognizes that the impact on Murdoch may have been acutely disappointing, but claims no more so than any aspirant applicant whose application is turned down.

93. The respondent further asserts that the position of diabetics in society is not notoriously disadvantaged. As a group they may have experienced some pattern of disadvantage in the past, but not nearly to the same extent as persons who are HIV positive, for example. The history of the blanket ban against Type 1 diabetics comes not so much from unfair prejudice against

people with diabetes, but from the factual history of treatment of diabetics dependent on insulin. The disadvantage arises primarily from their medical condition itself, and the extent to which it rendered them incapacitated. The disadvantage as a group is a factor to be considered, but not on its own a weighty one.

94. *Harksen* also refers to the nature of the provision or policy and the purpose sought to be achieved by it. As discussed earlier, the respondent's policy was not aimed at impairing Murdoch's dignity. The worthy societal goal sought to be achieved was the safety of Murdoch as well as his fellow employees and members of the public.

95. A further relevant circumstance, in the opinion of the respondent, is that as government it has discretion to determine its practices in regard to risk management and to err on the side of caution. The legal duties on the respondent, particularly in terms of OHSA, favour the blanket ban. There was, according to the respondent, no other reasonably practicable way of removing or reducing the risk in this matter given the operational constraints.

96. These submissions, while prudent, in some respects suffer a degree of inappropriate paternalism. All else being equal, Murdoch should be free to choose his career path relying on his own understanding of his health and earning prospects. And insofar as his disappointment has relevance, it should be kept in mind that but for his diabetes he would not have been disappointed. It is common cause that he would have qualified and moved on to pursue his calling. He has not been disappointed because of a deficiency in skill, qualifications or performance. Even though the arguments display rationality, on balance they are diminished by considerations of legitimacy and fairness. The position of insulin dependent diabetics in society is such that in practice they are denied employment and inhibited in realising their ambitions in various occupations simply because of their medical condition and a common misapprehension of its nature. The blanket ban on the employment of diabetics and the purpose sought to be achieved by it, the minimisation of risk to employees and others, is based on inaccurate, generalized assumptions about insulin dependent diabetics as a class or group and as such is open to the criticism of being disproportionate. The respondent has given insufficient regard to the compelling evidence and arguments of the kind presented by Prof Bonnici, and reflected in the Diabetes UK Guidelines, that well controlled insulin dependent diabetics are able to function effectively with minimal risk of a severe hypo, shown to be a rare occurrence in optimally controlled individuals. Accordingly, the blanket ban is not carefully tailored to the legitimate objective of public safety and impairs Murdoch's rights more than is reasonably necessary. A policy or system of individual assessments, along the lines envisioned in the Diabetes UK Guidelines, and as accepted by the courts in Canada and the USA, would be a less intrusive or drastic means, equally, if not more, conducive to the legitimate aim of the respondent, but

reflecting greater proportionality between the effects of the policy and its objective. Murdoch has been unfairly prevented from fulfilling his lifelong dream and calling, namely that of becoming a full-time firefighter. The discrimination affects the rights, not only of Murdoch in the present case, but also of diabetics generally.

97. The respondent has made something of the fact that there was at the time of the decision no reliable data or statistics or reported clinical trials on which to base a more accurate risk assessment than that performed by the respondent. There is admittedly little hard evidence, but I cannot agree that such justifies an unmitigated approach to managing the risk. The study regarding drivers in Scotland could have been explored more thoroughly. There is also the International Register which the applicants maintain presents reliable evidence of a lack of risk associated with employing insulin dependent diabetics as active firefighters. Even accepting Mr. Kantor's valid criticism that the register is based on hearsay evidence, (in that it relies on the truth of representations made not in court but on forms filled in by unnamed firefighters at unspecified times and places, in unspecified conditions, collated by Tim Hoy), it still serves as some indication, one sufficient to influence the policy of the UK government. Nevertheless, I accept it should be treated with a measure of caution because most, if not all, the data in the register was recorded before 1 October 2004, the date on which the blanket ban was lifted in the UK, when there was more incentive for insulin dependent diabetics to report that no incident was related to their impairment, for fear of possible exclusion. Furthermore, there is no indication of how many of the people on the register hold rank, and are more likely to do less strenuous work, and how this might affect the reliability of the data. These criticisms accepted, one fact is certain: as appears from the report of the Office of the Deputy Prime Minister in the UK, the register had some influence in the uplifting of the ban in the UK. What is more, the fact remains that there is no evidence or documentary record of a single reported incident of any firefighter anywhere sustaining or causing injury as a result of a severe hypo while in a hazardous situation. Admittedly, this may follow from so few being in employment as a consequence of blanket bans, but then again 6 out of 12 countries surveyed in Europe did not have such a ban.

98. Taking account of the preceding analysis and in the absence of any convincing evidence pointing to its efficacy, the blanket ban is guilty of overreach. Accordingly, the ban and its specific application to the first applicant constitute unfair discrimination.

99. Unfair discrimination can be justifiable in our law. The justificatory stage is where the respondent seeks to justify otherwise unfair discrimination. In human rights or constitutional law the notion of "unfair" discrimination focuses on the holder of the right, whereas justification focuses on the purposes, actions and reasons of the government, and not the rights of the holder.

Factors that would or could justify interference with the right to equality are to be distinguished from those relevant to the enquiry about fairness. The one is concerned with justification, possibly notwithstanding unfairness; the other is concerned with fairness and with nothing else - *President of the Republic of South Africa v Hugo* 1997 (4) SA 1 (CC) @ 36 B-C. Justification or limitations analysis happens under the Bill of Rights in terms of section 36 of the Constitution, which provides:

> (1) The rights in the Bill of Rights may be limited only in terms of law of general application to the extent that the limitation is reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom, taking into account all relevant factors, including—
>
> (a) the nature of the right;
> (b) the importance of the purpose of the limitation;
> (c) the nature and extent of the limitation;
> (d) the relation between the limitation and its purpose; and
> (e) less restrictive means to achieve the purpose.
>
> (2) Except as provided in subsection (1) or in any other provision of the Constitution, no law may limit any right entrenched in the Bill of Rights.

100. Section 36 of the Constitution has no application in this matter. The provision explicitly restricts its application to the determination of the justifiability of limits upon the rights in the Bill of Rights. The applicants have not founded their claim on an alleged violation of the equality rights in section 9 of the Constitution, but instead filed a statutory claim under the EEA. In the context of the EEA, some of the relevant factors considered in the justification enquiry under the Bill of Rights can legitimately be taken into account, as I have done, in the fairness enquiry. The most important justification in the employment situation, though, falls for consideration under the specific justification ground permitted by section 6(2)(b) of the EEA. Section 6(2)(b) of the EEA, it will be recalled, provides that it is not unfair discrimination to distinguish, exclude or prefer any person on the basis of an inherent requirement of a job. This is an absolute defence against unfairness - *Leonard Dingler Employee Representative Council & others v Leonard Dingler (Pty) Ltd & others* (1997) 11 BLLR 1438 (LC) @ 148H.

101. **Dupper & Garbers** in ***Employment Discrimination: A Commentary*** **in Thompson and Benjamin, *South African Labour Law* (Juta 2004)** submit that the defence should be applied restrictively. Any legislatively formulated justification of discrimination constitutes, in effect, a limitation on the constitutionally entrenched right to equality and this militates against an expansive reading of the phrase “an inherent requirement of the job”. The term “inherent requirements” is not defined in the EEA but originates from the Discrimination (Employment and Occupation) Convention No 111 of 1958 of the International Labour Organisation, in respect of which the committee of experts has emphasised the need for a strict interpretation. In ***Association of Professional Teachers and another v Minister of Education and others***

(1995) 16 *ILJ* 1048 (IC), the Industrial Court held that this defence should be allowed only in very limited circumstances.

102. The long title of the EEA includes as one of the purposes of the Act the giving of effect to the obligations of the Republic as a member of the International Labour Organisation. Article 3 of Convention No 111 provides, inter alia:

> Any distinction, exclusion or preference in respect of a particular job based on the inherent requirements thereof shall not be deemed to be discrimination.

The term "inherent" has been interpreted as "existing in something, a permanent attribute or quality; forming an element, especially an essential element, of something, essential" - Du Toit et al, *Labour Relations Law* (4th Ed Butterworths) at 569.The ILO has identified the following as examples of unacceptable requirements:

> • the evaluation of an individual's competence for a task based on stereotypes of the group to which the employee belongs;
>
> • requirements based on the preferences of employees and clients;
>
> • requirements that tasks should be performed in a particular way when there are other reasonable ways of doing so; and
>
> • qualifications based on 'light' or 'heavy' work which amount to a veiled distinction between the sexes that might impede the promotion of women.

103. The respondent avers that it is an inherent requirement of the job of a firefighter not to expose fellow employees, the general public or oneself to real risk of harm to their or one's own safety. Further, in order to fulfil that inherent requirement, due to the dangerous circumstances in which firefighters on active duty may be exposed, they must not be at risk of having a severe hypoglycaemic episode while on duty. This, as we have seen, according to Sparks, Carstens and Woolley, could arise where the insulin dependent diabetic has a hypoglycaemic episode in circumstances where he cannot or does not take immediate steps to prevent the development of a severe episode, because, for instance, he has no glucose or carbohydrates to take or he has glucose or carbohydrates to take but cannot or fails take them. Thus a Type 1 diabetic may forget to insert or replace glucose sachets in his tunic, he can become separated from his tunic, the glucose sachet could burst or be otherwise destroyed or contaminated. Likewise the firefighter may have glucose or carbohydrates to take but cannot take them because his mouth is covered with a breathing apparatus or he cannot access the sachet because his arms are trapped or injured, or he cannot get his glove off and there is nobody on hand to assist, or he is using both hands. He could have the

glucose or carbohydrates to take but not take them because he is distracted by other events on the fireground or in the extreme heat and fatigue action he confuses the warning signs of the hypo with general fatigue.

104. These risks, the respondent argues, should be assessed taking into consideration the probability of the occurrence of the risk event and the severity of the consequences should it occur, as well as the employer's legal obligations to co-employees and others, whether arising from a common law duty of care, occupational health and safety statutes, or other aspects of the employment regulatory regime.

105. As appears from the discussion of the medical evidence, it cannot be denied that hypoglycaemia is a fact of life for Type 1 diabetics, as it is for many non-diabetics, and it may be difficult to detect with any certainty whether a particular diabetic will suffer an incapacitating reaction. Whilst the risk is less for someone who is well controlled than otherwise, it is still there. Even the best-controlled and disciplined Type 1 diabetic could be prone to human error. Innumerable factors (including, according to Prof Bonnici, motivation, mood, family support, and complacency) could influence the person, and hence the risk. Both Carstens and Rowen testified that these risks are real, not fanciful, although they might be very small. In their assessment, they could not be rated as “acceptable”. The respondent therefore submits that any Type 1 diabetic runs the risks set out above, and in the light of the inherent requirements of the firefighter job the blanket ban is justifiable.

106. These arguments, it would seem to me, support not the imposition of a blanket ban, but rather a policy of individual assessments. The respondent is in actual fact saying that the risk will vary from person to person. I agree. That is why the ILO and the changing policy elsewhere regard individual assessments as necessary. Under the Convention the evaluation of an individual’s competence for a task based on stereotypes of the group to which the employee belongs is an unacceptable requirement. The specific examples alluded to by the respondent can be managed on an individual basis with minimal effort. A hypo-aware firefighter usually will be able to leave the fireground as he experiences the onset of hypoglycaemia; he can be assisted by his partner (firefighters work in pairs); he can run high; or he can limit his use of breathing apparatus to an acceptably limited period. These practices and safeguards, to be applied as a matter of individual policy, for a medically assessed individual, are proportionate means of reducing the risks and giving effect to the principle of non-discrimination. Although the applicants in the pre-trial minute agreed that they seek no exceptional reasonable accommodation, the proportional practices suggested do not attain the level of special status or exemptions, rather they are coping strategies applicable as criteria of assessment for determining suitability for employment.

107. In Australia the test is, like in South Africa, whether the “inherent

requirements of the position" are such as to justify the discrimination. In *X v The Commonwealth* [1999] HCA 63 the High Court of Australia was concerned with the dismissal of a newly inducted recruit from the military due to his HIV positive status. The approach of the court to the inherent requirements of the job and risk assessment is instructive. The court held:

> I do not think that it is the proper approach to ask whether the degree of risk emanating from the disease defines or can be prescribed as an inherent requirement of the employment. Rather the degree of risk is relevant in determining whether X *is able to carry out* an inherent requirement of the employment, namely, the requirement not to expose fellow soldiers and others to a real risk of harm to their health or safety.
>
> It is not a case of the employer seeking to impose a term or condition, but one where the inherent requirement arises as a matter of law. The real difficulty of the case lies in determining whether X can carry out that requirement with or without assistance. The issue of "inherent requirement" has become complicated only because, at all stages of the argument, the Commonwealth has insisted that the ability to "bleed safely" is the relevant inherent requirement.. …..
>
> The circumstances for such transmission would need to be, as the Commissioner described them, "extreme". The risk of transmission in such extreme circumstances was "very low", although not "fanciful". By inference therefore, in the overwhelming majority of the circumstances in which a soldier such as X would be required to carry out the requirements of his particular employment, there would be no such risk, whether in training, or even in combat duties.

108. In the same way, while I readily accept that the consequences of the realisation of the risk of a severe hypo in a hazardous situation on the fireground could prove disastrous, I do not see the degree of risk as material. It is no more so than the risk of an overweight firefighter having a heart attack, or a surgeon suffering a cerebral episode during an operation. The relatively minimal risk of that happening should not disable the employee from carrying out the inherent requirements of the job and cannot justify a total ban on employment. Both Murdoch and Hoy have shown that they pose little or no risk and have successfully carried out the inherent requirements of firefighting for a considerable and continuous period of time. Neither of them has had a severe hypo in their combined 27 years of firefighting. Their past experience is the best available forecaster of the future. The 72 UK firefighters with diabetes on the International Register of Firefighters with Diabetes have, between them, 700 person years of active firefighting without an incident involving a severe hypo. Whatever evidentiary qualifications one may have about the hearsay nature of the evidence about the register, as I have said, it reflects an achievement to which the UK government was prepared to attach some weight in changing its policy.

109. In so far as the respondent has valid concerns about being sued in delict for harm arising out of the employment of Type 1 diabetics, that too is misplaced. Firstly, if such employment is justified in order to observe the duty not to unfairly discriminate in its employment practices, the respondent's conduct is unlikely to be considered wrongful. Should it conscientiously

assess firefighters individually and proportionately, it further will have discharged its duty to take reasonable preventative steps to minimize any foreseeable risk, especially if it makes reasonable adjustments where required. Its legitimate concerns about public liability must yield to the constitutional principle of non-discrimination.

110. Therefore I agree with the applicants that the respondent has failed to justify its unfair discrimination (in the form of a blanket ban). Without in any way denying that firefighting is by its nature a hazardous occupation, to simply exclude all insulin dependent diabetics from the occupation on this ground is not justifiable.

111. The respondent is guilty of assigning characteristics which are generalised assumptions about groups of people to each individual who is a member of that group, irrespective of whether that particular individual displays the characteristics in question. It is treating all insulin dependent diabetics the same and imposing a blanket ban on the employment of that group as firefighters, irrespective of whether the particular individual - such as Murdoch, who is physically fit and in optimal control of his diabetes – displays any susceptibility to uncontrolled hypoglycaemic episodes.

112. Added to all this, the Constitutional Court has confirmed that an approach of an individualized assessment, rather than a blanket ban, should be followed in cases where the employer seeks to differentiate on health grounds in an employment policy or practice. In ***Hoffmann v SA Airways* (2000) 21 *ILJ* 2357 (CC)** the Constitutional Court dealt with the situation where SAA adopted a policy of not employing HIV-positive cabin attendants. Holding that discriminatory practice to be unfair, Ngcobo J commented:

> The fact that some people who are HIV positive may, under certain circumstances, be unsuitable for employment as cabin attendants does not justify the exclusion from employment as cabin attendants of all people who are living with HIV. Were this to be the case, people who are HIV positive would never have the opportunity to have their medical condition evaluated in the light of current medical knowledge for a determination to be made as to whether they are suitable for employment as cabin attendants. On the contrary, they would be vulnerable to discrimination on the basis of prejudice and unfounded assumptions – precisely the type of injury our Constitution seeks to prevent. This is manifestly unfair…
>
> The need to promote the health and safety of passengers and crew is important. So is the fact that if SAA is not perceived to be promoting the health and safety of its passengers and crew this may undermine the public perception of it. Yet the devastating effects of HIV infection and the widespread lack of knowledge about it have produced a deep anxiety and considerable hysteria. Fear and ignorance can never justify the denial to all people who are HIV positive of the fundamental right to be judged on their merits. Our treatment of people who are HIV positive must be based on reasoned and medically sound judgments. They must be protected against prejudice and stereotyping. We must combat erroneous, but nevertheless prevalent, perceptions about HIV. The fact that some people who are HIV positive may, under certain circumstances, be unsuitable for employment as cabin attendants does not

> justify a blanket exclusion from the position of cabin attendant of all people who are HIV positive.
>
> The constitutional right of the appellant not to be unfairly discriminated against cannot be determined by ill-formed public perception of persons with HIV. Nor can it be dictated by the policies of other airlines not subject to our Constitution.
>
> Prejudice can never justify unfair discrimination. This country has recently emerged from institutionalized prejudice. Our law reports are replete with cases in which prejudice was taken into consideration in denying the rights that we now take for granted. Our constitutional democracy has ushered in a new era – it is an era characterized by respect for human dignity for all human beings. In this era, prejudice and stereotyping have no place. Indeed, if as a nation we are to achieve the goal of equality that we have fashioned in our Constitution we must never tolerate prejudice, either directly or indirectly. SAA, as a state organ that has a constitutional duty to uphold the Constitution, may not avoid its constitutional duty by bowing to prejudice and stereotyping.

113. Accepting that there are different considerations and levels of stigma attached to HIV as compared to diabetes, justifying a stricter level of judicial scrutiny in relation to the former, the learned judge's reasoning with regard to the unjustifiablity of relying on prejudiced and outdated medical knowledge is markedly apposite in this case. And the medically sound judgement of South Africa's leading expert on diabetes, Prof Bonnici, is incontrovertibly that a blanket ban is irrational, unfair and unjustifiable in the light of current medical knowledge.

114. To repeat the general points made regarding fairness and justifiability: the risk justification lacks justifiability for not being rationally connected or based upon the medical evidence. The range of factors informing the risk, as with many other medical conditions such as obesity, asthma and cardio-vascular disease, requires that each case should be assessed on its own merits and be based on an individualised assessment of the job applicant. If the job applicant meets all other requirements such as physical fitness and visual acuity, an individual assessment should be made as to that person's control of is or her diabetes and the likelihood of that person having a severe hypoglycaemic episode. In each instance, the employer's medical officer should assess the risk with regard to, *inter alia*, the applicant's past history; his control of his diabetes; hypo-awareness; and measures taken to minimise risks.

115. The purpose of the EEA is to achieve equity in the workplace by, inter alia, promoting equal opportunity and fair treatment in employment through the elimination of unfair discrimination. The Act provides that it must be interpreted in compliance with the Constitution and so as to give effect to its purpose. Equality lies at the heart of the Constitution and aims to ensure that we achieve a diverse workforce with opportunities for all, including diabetics, to pursue their preferred calling.

116. In the premises, I am persuaded that the respondent, contrary to the provisions of the EEA, has unfairly discriminated against the second applicant in its employment policy and practice on the ground of his medical condition, namely Type 1 diabetes mellitus.

The order

117. The parties have made certain submissions with regard to appropriate relief, which are reflected in the order that follows. Both have requested an order for costs on the basis that costs should follow the result. The respondent, albeit perhaps too cautious, is a public authority accountable to the public and its ratepayers and has not acted unreasonably. It needed a judicial decision in the interests of certainty in un-chartered territory. The second applicant has been represented by his union, which continues in an industrial relationship with the respondent. In the circumstances a costs award is not justified. I accordingly make the following orders:

1. The respondent's failure to transfer the second applicant from his position as law enforcement officer to that of firefighter within the Directorate: Protection Services is declared to be unfair discrimination.

2. The respondent's employment policy of refusing to employ insulin dependent diabetics as firefighters is declared to be unfair discrimination.

3. The respondent is ordered to assess each applicant for the position of firefighter on the employee's own merits and on objective criteria, including physical and medical fitness.

4. The respondent shall second the second applicant to Fire and Emergency Services (or the current equivalent) in the Cape Town Administration in the position of Learner Firefighter with effect from the date of the commencement of the first Firefighter 1 Training Course held by the Cape Town Administration following the date of judgment. The said secondment:

    4.1 is conditional upon the second applicant successfully completing the aforementioned Firefighter 1 Training Course, failing which the said secondment shall be reversed; and

    4.2 is not a permanent placement, irrespective of whether or not the second applicant successfully completes the said Firefighter 1 Training Course.

5. The second applicant shall remain at his level of remuneration, with such notch increase as he would usually be entitled to from 1 July

2005, until such time as he may successfully complete the aforementioned Firefighter 1 Training Course.

6. In the event that the second applicant does successfully complete the said Firefighter 1 Training Course, his remuneration shall be adjusted to the Cape Town Administration's scale D 18 T, commencing on the notch R60 282, 00, as it is reflected as at 7 June 2005, or corresponding amount following annual increase. From the time of adjustment only, the firefighters' standby allowance shall apply.

7. Save as is specified above, the current rules, policies, practices and collective agreements of the respondent, as they have been applied to other employees seconded as learner firefighters to Fire and Emergency Services in the Cape Town Administration in 2003, shall apply to the second applicant.

8. There is no order as to costs.

MURPHY AJ

Date of trial:

Date of Judgement: 18 July 2005

Applicant's representatives: A Steenkamp and Z Majamane of Sonnenberg Hoffmann Galombik

Respondent's representative: Adv Peter Kantor