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Statement by Minister for Defence Mr Teo Chee Hean in Response to Parliamentary Question on Deaths of SAF Servicemen Due to Sudden Cardiac Arrest

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Mr Teo Chee Hean, Minister for Defence

Mr Speaker, Sir, Ms Irene Ng has asked about the recent deaths of two SAF servicemen while running - one was a regular and the other was a Full-time National Serviceman (or NSF). These have understandably given rise to some concern among Singaporeans. I thank Ms Irene Ng for this opportunity to provide more information on this issue. And I take this opportunity also to extend my condolences to the families of the two servicemen, 2WO Teh Kok Lian and 3SG Ivan Ong Peng Ghee.

First, allow me to provide some details on the two cases. 2WO Teh Kok Lian, a regular serviceman aged 39, was participating in a routine run on 22 June when he collapsed at about 8.45 am. He was given immediate medical attention and evacuated to the camp medical centre where the medical officer initiated resuscitation measures. At 9 am, he was transported by ambulance to the National University Hospital. 2WO Teh passed away at National University Hospital at 9.40 am.

3SG Ivan Ong Peng Ghee, a Full-time National Serviceman, section instructor aged 19, collapsed at about 8.45 am after an informal, self-paced jog with his colleagues. He was given immediate medical attention and brought to the camp medical centre where the medical officer initiated resuscitation measures. At 9.27 am, a helicopter which had been activated

took off from Pulau Tekong to evacuate 3SG Ong to the Singapore General Hospital. He passed away about 50 minutes after he arrived at SGH.

In both cases, the servicemen were given immediate medical attention on site and at the camp medical centre, and then promptly evacuated to hospital. The medical response was comprehensive and appropriate. MINDEF's safety investigations into the two incidents concluded that there were no safety breaches in both cases. MINDEF is also convening official Inquiries into the two deaths.

Sir, the autopsy on 2WO Teh concluded that he had died from sudden cardiac arrest that resulted from an acute myocardial infarction, in layman's terms he had suffered a heart attack. The autopsy report on 3SG Ong is not yet ready as the Health Services Authority has not completed its investigations.

Sudden cardiac death or SCD results from sudden cardiac arrest in a person who is usually in a state of normal health. In other words, the person may not exhibit any warning symptoms or signs prior to the attack. In the SAF, over the period from 1996 to 2005, for these nine years, there were 19 cases of sudden cardiac deaths, that is about 2.1 cases a year. Of these, five had collapsed during training; the others were not during training. There is no comparative data for the Singapore male population. However, the National Heart Centre study showed that there were 261 cases of sudden cardiac deaths among the Singapore male population aged 18 to 45 over the period 2001 to 2003, that is over a three year period, or an average of 87 cases per year.

To put the issue in perspective, allow me to share some pertinent information on the chances of surviving a sudden cardiac arrest. Dr Lim Swee Han, Senior Consultant and Head of the Singapore General Hospital Accident and Emergency Department, reported in a January 2005 paper that there was a 4.1% survival rate in 968 non-trauma cardiac arrest cases in a five year period, from 1994 to 1999. Dr Marcus Eng Ong Hock, in a cardiac arrest and resuscitation epidemiology study in 2003 reported that from a total of 548 out-of-hospital cardiac arrests in Singapore, only 2.0% survived to discharge. Even among patients who suffered cardiac arrest in tertiary hospitals, that is while they were already in hospital where the best care is available, the survival rate to discharge ranged from 18 to 32%, according to studies from various countries. Unfortunately, death as a consequence of cardiac arrest is the most common outcome even with optimal management.

Sir, let me now explain the SAF's medical screening system. Every SAF serviceman, whether a National Serviceman or regular, goes through a pre-enlistment medical examination at the SAF's Medical Classification Centre. There he is fully assessed to determine the presence of pre-existing medical conditions. The medical assessment includes a resting electrocardiogram (or ECG), chest X-ray, blood tests and urine tests, and a physical examination. Individuals with a history of death in the immediate family before 40 years of age, or sudden death, are questioned more thoroughly and may be referred for specialist assessment and additional investigations.

The SAF's routine screening for heart disease in pre-enlistees is equivalent to the standards recommended by the European Society of Cardiology and International Olympic Committee, and higher than the standards in the United States recommended for competitive athletes. Our screening protocols are also similar to those used by other established armed forces. We want to be sure that our servicemen, especially the full-time National Servicemen, are medically fit for continuous and strenuous physical training.

For regulars, the medical screening includes periodic health examinations commencing at age 25. All servicemen (including operationally-ready NSmen) who are 35 years of age or older undergo medical screening for cardiac risk factors when they are required to take the Individual Physical Proficiency Test or IPPT. If the test results are abnormal, the serviceman will be referred for further specialist assessment. If the results are normal, then this medical screening is done once every two years until age 40 and annually thereafter. These measures exceed the Ministry of Health's clinical practice guidelines which recommend that screening begins at age 40 in the absence of any risk factors. The SAF's current medical screening regimes are comprehensive and are based on sound medical evidence of their effectiveness. They are continually reviewed to ensure that they are consistent with current medical knowledge and practice.

Sir, training in the SAF is conducted at a progressive pace. For example, during the first week of basic military training, recruits are gradually eased into the camp environment and training tempo. The recruits then go through other basic modules in physical fitness and military skills before moving on to more rigorous training. SAF commanders are always on the look-out for servicemen who may be experiencing problems during training.

Apart from progressive training, the SAF has a comprehensive safety management system that includes compulsory adequate rest before strenuous training, compulsory drinking of water before, during and after training, and pre-training screening to identify those who are not feeling well. In fact, our servicemen are regularly reminded to seek medical attention if they feel unwell. Those who seek medical attention are given full access to primary and specialist health care. Our SAF medical officers abide by the same professional ethics and standards as their civilian counterparts. They are also bound by the SAF values of professionalism, ethics and care for soldiers.

Sir, Ms Irene Ng has asked about the use of defibrillators. There are two types: semi-automated defibrillators used by medical doctors and automated external defibrillators (AEDs) which can be operated by trained individuals, including our SAF medics. Defibrillators work by delivering electrical shocks to the heart in order to convert abnormal heart rhythms back to normal rhythms. However, not all abnormal heart rhythms can be effectively treated by electric shock, and an AED would interpret the heart rhythm of a person who has gone into sudden cardio-respiratory arrest and advise the operator whether or not an electric shock is indicated. Studies indicate that if there is early defibrillation when there is a shockable rhythm, 20-50% of victims may survive.

AEDs were progressively introduced into the SAF last year to enhance medical coverage. There are currently 237 AEDs in our camps. They are operated by our medics during strenuous activities such as the IPPT and Standard Obstacle Course test. Since its introduction, the AED has been applied once, when 2SG Ong Jia Hui was brought ashore after a diving incident last month. However, he had no shockable rhythm and the device was therefore not activated.

Ms Irene Ng has also asked about cases of successful resuscitation after a sudden cardiac arrest. There was a recent case, although this was not with the aid of a defibrillator. In May this year, a 27-year-old regular serviceman collapsed during an IPPT run. He had no pulse and was not breathing. He was promptly evacuated to the medical centre, where cardio-pulmonary resuscitation was begun and he was given an intravenous infusion and oxygen. The serviceman was stabilised and then evacuated to NUH. He has since returned to work.

Sir, I would like to assure Singaporeans that the safety and health of our servicemen is of the highest priority to MINDEF and the SAF. We have comprehensive and rigorous screening regimes for those coming into the SAF, including our Full-time National Servicemen. And we have appropriate safety measures and medical cover for our servicemen when they are conducting training or rigorous physical activity. Sudden cardiac death is, unfortunately, something that cannot be completely prevented, as the statistics for not just the SAF but the Singapore population at large show.

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