INTRODUCING THE STRATEGY FOR SUDDEN ADULT DEATH SYNDROM & SUDDEN CARDIAC DEATH SYNDROM PREVENTION OF CRMC THROUGH QUESTIONS AND ANSWERS

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What is Sudden Adult Death Syndrome or SADS?
SADS is an unexpected sudden death caused by an arrhythmia that caused the heart to suddenly malfunction to the point of cardiac arrest (Reddy et al., 2009). This arrhythmia was either unknown, undetected, overlooked, or newly onset a few minutes before it caused death. This syndrome happens in younger and older adults. About 20% of people who die of SADS never had an underlying cardiac condition (Behr, 2014). However, having any underlying cardiac condition has been shown to increase the likelihood of SADS occurrence. This is why it is important to screen patients to catch them before SADS does it.

What is Sudden Cardiac Death or SCD?
SCD is the occurrence of a cardiac arrest event that happens suddenly and without obvious pre-warning. About 25% of those who suffer SCD have never had an underlying pre-existing cardiac condition (Drory et al., 1991). In contrast, those who have any underlying cardiac condition are at increased risk of SCD. This is why it is important to screen patients to catch them before SCD does it.

What is the strategy of CRMC to try to prevent SADS and SCD?
CRMC is hoping to adopt a 2-screening process in order to catch as many patients as possible who may be at higher risk than others to suffer SADS or SCD. The reason why CRMC uses a 2-screening process and not just one is because the first test is sensitive and tries to achieve high sensitivity. The second, instead, is specific, and tries to achieve high specificity. These two characteristics are at the base of epidemiological tests in public health. Epidemiology is the study of how a disease is distributed in a given community. Public health is the health subject that is interested in how healthy a community is and what can be done to improve health and healthy conditions in that given community.

What is a sensitive test?
In epidemiology, a sensitive test is a test that aims at catching as many people as possible that may have a certain disease or condition. A sensitive test catches as many as possible in a community that are likely to get the disease. This does not mean that everyone who scores high on such screening necessarily has a disease. It just means that these are the most likely to have it. The MEWS is a sensitive screening tool. Just because one scores high on the MEWS it does not mean that they necessarily will die of SADS or SCD. It just means that they are among those who are somewhat likely to suffer one such occurrence.

What is a specific test?
In epidemiology, a specific test is a test that aims at catching as few people as possible that may have a disease or condition. A specific test catches as few as possible in a community that are likely to get a given disease. The 6-lead ECG is the specific test that CRMC uses to identify those at increased risk of SADS or SCD. This means that those who test somehow positive to this test are at very high risk of suffering SADS or SCD in the future.

Why can't we just use only one or the other?
The reason why a specific test is used only after a sensitive test has been used is because otherwise, we would not be able to catch as many as possible. The reason why a sensitive test alone should not be used is because otherwise, we would not be able to be sure that those who may be at risk or SADS and SCD are truly at risk of SADS and SCD. Both of them must be used to be sure.

Does this mean that we must use both tests on everybody we screen?
No. This is not the case. We should only use the specific test on those who score higher than a certain threshold. If one scores higher than that specific threshold, then, we should run a 6-lead ECG on them to make sure that they are not among those who are truly at risk of SADS and SCD.

What is the threshold that triggers a 6-lead ECG screening?
The threshold that triggers the 6-lead ECG screening is a MEWS of 5 or above on those who are MEWS scored.

Does this mean that a score 1-4 is meaningless?
No. Also this is not the case. A score 1-3 means that the patient is not exactly the healthiest at the moment of the screening, or at least, his or her organs are not functioning as they should in a normal setting and environment. This may be temporary and insignificant or the sign of a serious underlying condition. This is the reason why when one patient scores between 1 and 3, the primary Care Provider or PCP should be informed. This way, the PCP can check what may be the cause of this deviation from normal physiological function in the patient, make a diagnosis, run further test, and if needed, refer to a specialist. A score of 4 means exactly the same. However, it may be safer for the patient to remain in the company of a member of staff until the PCP takes over. This patient may be a borderline between a low and high-risk for SADS and SCD, and it would be best if they did not remain alone while inside the clinic.

Who reads ECGs at CRMC?
In CRMC physicians, nurse practitioners, and registered nurses are expected to be able to read and interpret ECGs. However, most of the times, this is done by the registered nurse while the physician is still attending to other patients. The registered nurse interprets the ECG and sends the interpretation in a task to the appropriate physician for the patient highlighting where in the ECG findings were obtained.

What findings warrant transferring the patient to the emergency department?
The conditions that warrant transfer of the patient to the emergency department are the following:

- New onset of Atrial Fibrillation (AF)
- ST segment elevation
- ST segment depression
- Torsade de Pointes
- Tented T waves
- Right Axis Deviation (RAD)
- Extreme RAD
- New onset or Right Bundle Branch Block (RBBB)

The following conditions also warrant transfer of the patient to the emergency department if the patient is symptomatic:

- Left Axis Deviation (LAD)
- RBBB
- Supra-ventricular tachycardia (SVT)
- Tachyarrhythmia
- Delta Waves – Wolf-Parkinson-White (WPW)

These same conditions, however, warrant referral to the lab for a 12-lead ECG for patients who are asymptomatic, with follow-up within 7 calendar days.

Who can perform MEWS on patient?
Only Health Care Aides, Nurses, and Physicians who have been trained how to calculate them may perform MEWS on patients in CRMC. Cranston Ridge Medical Clinic employs only Medical Office Assistants who are also registered HCAs in Alberta. HCAs have further training from the Alberta HCA Competencies Profile Tool 2019 from the Government of Alberta, and from the Diploma in Clinical Nursing Skills accredited by

the U.S. Army Medical Center of Excellence, which covers among the many subjects, the cardiovascular system pathophysiology, and testing procedures.

How long does it take to be trained to use the MEWS?
For HCAs and Nurses, the training takes about 2 weeks because they are trained to identify the patients on which the MEWS should be performed, as well as how to perform them, and how to act on the various scores.

Why RNs in CRMC may read and interpret ECGs?
Only RNs with advanced clinical practice license or those studying toward such license may work at CRMC. Part of the training for such nurses is to be able to read and interpret ECGs.

What if a patient is made anxious by the screening performed on him or her?
In this case, they may score higher in the sensitive screen (the MEWS), however, even if they did score higher in such test, their score would trigger the specific test (the 6-lead ECG). The latter would be able to discern if the patient is truly at risk of SADS and SCD or if the high score in the MEWS is only due to anxiety. Anxiety does not kill. Therefore, all that is needed is for the patient to be invited to calm down and relax and to explain why these tests are performed. Remember that tests should always be performed on patients who give informed consent. If they agreed to being tested, they for sure are capable of handling themselves. No damage was inflicted on them.

REFERENCES

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