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SUICIDE

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Hi. I'm Lieutenant Colonel Charles Engel, the Director of the Deployment Health Clinical Center and an associate professor of psychiatry at Uniformed Services University. Today I'm going to be talking with you about suicide and its prevention. The first couple of slides are framing a couple of issues that I want to emphasize over the course of my presentation today.

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The first is a new story out of Al-Jazeera, recent news story, entitled "Suicides Dog U.S. Troops in Iraq." It is a story that really shows how it's important that we take care of our own, not only from the perspective of doing what's right by them, but also by making sure that we don't create openings for outsiders to use these sorts of difficulties as propaganda against our own troops and to spread misinformation through the news media. The issue of suicide is a very important one,

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and the second slide also frames this at a slightly different than clinical level, a level that is at the population, and it offers a view of an article that was recently published in the British Medical Journal touting the Air Force's success with the suicide prevention program that's been in effect since 1997, and we'll return to that at the end of the presentation today. For now I just offer it to give you the up front message that there are different levels of which suicide can be addressed. One is at a policy and population level and the other of course is at the one-on-one patient care, the clinical level, and both of these are important. We in the military have the added advantage of being able to configure population-wide programs, and again we'll touch on that towards the end.

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By way of overview today, we're going to be talking about definitions related to suicide. We'll be talking about the issue of predicting suicide versus the reduction of suicide risk. We'll talk about general epidemiologic risk factors in the population, risk factors for both attempting suicide as well as risk factors for completing suicide. We'll talk about associated mental illness such as depression, which frequently occurs as a risk factor for suicide, and we're going to talk about intervention both at the clinical level and at the population level.

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From a definitional level, its important to understand that suicide is not a mental illness. Suicide is not a characterologic defect. It is not a trait, but suicide is a multifactorial problem that is essentially a behavior,that behavior that results in self injury and death, and there are many different causes and factors that play into whether someone is thinking about suicide and play into whether someone takes steps to complete a suicide or attempt it.

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The magnitude of the problem is great particularly in military populations. It is the second leading cause of death in the younger age groups such as those who are in the military and that's second to accidents. In our population that tend to be otherwise relatively healthy and chronic disease-free, mental illness is an important source of morbidity, and injuries are an even bigger source of morbidity. Suicide mixes both really. It's the issue of injury-related to distress that an individual is experiencing about their circumstances. In the United States, about 30,000 suicides occur every year which amounts to about

three every hour or 75 every day. This of course doesn't include attempts, and there are at least ten attempts nationally for every completed suicide. This also doesn't include the challenge of misclassification. When we go to count suicides, there are often difficulties determining whether, for example, an overdose is an intentional overdose in essence amounting to a suicide or whether it is an accidental overdose. And similarly with one-car motor vehicle accidents, there is the challenge of knowing whether this was essentially something that was done on purpose or something that was the result of operator error.

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The incidence of suicide in the United States is about 12 per 100,000 person-years. So if you follow 100,000 people for a year you will observe about 12 suicides. This varies a good deal across different nations, and it also varies considerably across different states. In the United States, New Jersey has the lowest suicide rates, and in fact Nevada has the highest suicide rates. The places where suicide occur, the Golden Gate Bridge has the dubious honor of being the most frequent place where suicides have occurred with over 800 having occurred there since the bridge was opened in 1937. Countries such as Scandinavia, Germany and Japan have rates that are about double the rate in the United States. Other countries such as Spain, Italy and Egypt have rates that approach half the rates in the United States. So on a worldwide basis, the United States has a suicide rate that is probably in the middle of the developed nations.

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Now it's important to recognize that suicide prediction is a very difficult thing. In fact there is a large body of research which has shown repeatedly that psychiatrists and psychologists and social workers and other mental health professionals do little better than chance when determining whether a given individual is likely to commit suicide, and one of the most important reasons for that is that suicide is really so rare. This rate of 12 per 100,000 person-years is extremely low and makes it very difficult to decide when a person even when they're at a considerably elevated risk is likely to be quote "the one" that commits suicide. On a larger level though on a population level taking patients one at a time or looking at population wide numbers, in fact we know that we can quantify the risk of suicide for a given individual, and we can take active steps to reduce the risk for that individual. So we can reduce the likelihood that they would act on suicidal impulse that they experience, but in terms of knowing whether or not any given individual will act on those impulses, it's much harder to say. The task from a suicide risk reduction standpoint involves identifying those in the population who can benefit from care typically those who have previous attempts or who are actively thinking about or even planning their own demise, destigmatize the care that we can offer them, and then of course bring them into that care and deliver that care. The destigmatization of care for people who are suicidal is a particularly thorny issue worldwide, at least nationwide. There is considerable stigma associated with seeking assistance for mental healthcare and in the military you can imagine while good data are not available, that factors related to whether or not a service member wants to be seen as doing a good job, any perceived repercussion to career that might result from seeking care for mental illness, these factors can reduce the likelihood that someone who really needs care can receive it. So our objective is to make care more acceptable, essentially to make care more private so that people who have these sorts of thoughts and concerns and are at increased risk for suicide can get the care that they need to lower that risk.

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Let me come back to this issue of prediction versus risk reduction and the notion that perhaps we do little better than chance in predicting suicide in given individuals. As I suggested, the rate of suicide has a lot to do with that being about 10-12 per 100,000 person-years, about 10-12 completed suicides for every 100,000 people that you follow for a year forward, and if you think about that for a minute, if you were to increase an individuals risk a hundred-fold which is a dramatic increase in risk for any disease or illness condition, their rate would still only be one suicide per 100 person years, per 100 people followed forward one year in time. So even though that risk is considerably elevated, you'll notice that that risk is quite rare. And the actual timing of suicide varies based on a number of unpredictables, a number of chance

life events such as perhaps when a spouse might leave a person, when they might lose their job unexpectedly, and then changes that are also unexpected in general or psychological health status. It would be a solution if we could put people in the hospital or institutionalize them permanently. We certainly could prevent these folks from committing suicide, however, suicide has adverse effects of its own, and in a free country, a free nation, that encourages individual autonomy, it's neither ethical or practical to put people in the hospital in institutionalized settings simply because they think a lot about suicide. So this creates a real social dilemma.

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In terms of reducing risk factors, you can see risk factors as falling into one of two different groups, those that are static and those that are dynamic. Static risk factors tend to be those that are most easily quantified, but they're also those risk factors which we have the hardest time reducing because they tend to be stable over time. Dynamic risk factors are those that are amenable to change that we can focus our treatments on. They are often times more difficult to characterize. And the static risk factors fall in groups such as demographic characteristics, different psychiatric diagnoses which really fall somewhere between a static risk factor and a dynamic risk factor because severity of psychiatric illness can change over time, prior suicide attempts, the presence of chronic physical illness or the presence of certain types of personality disorders are known risk factors that are relatively unchanging, and there are clinical and situational risk factors which are dynamic and changing, and we'll go through these risk factors one at a time starting with the static risk factors.

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Among the most important and well-known static risk factors are gender and age. We know that women attempt suicide more frequently than do men, however, men tend to use more lethal methods and complete suicide more frequently than do women. The age of greatest suicide risk takes a very modest peak in adolescence. Some feel that the risk in adolescents has increased over the last two to three decades although that question remains controversial, but certainly as one gets older and into the fifth and sixth decades of life, their suicide risk increases considerably. For example, men over age 65 have a rate of suicide that is about four times the base rate in the population.

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Race is a mild risk factor. About 2/3 of all suicides in the United States occur among Caucasians. The rate of suicide in white males is 16.9 per 100,000 person-years so about one and a half elevated over the general population. Religious groups again are mildly associated with suicide. Catholics have the lowest suicide rates. Protestants have the next lowest, followed by the Jewish affiliation or ethnicity which have a higher rate of suicide. Relationship status is arguably something that is somewhat dynamic. It can change over time. However, I've listed marital status as a static risk factor because it is relatively stable, and we find that the highest rate of suicide risk occurs in divorced populations, the second highest in those who are single and have never been married and then followed by those who are married and the lowest risk group are those who are married with children.

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There are psychiatric disorders that are well known to be associated with suicide, and about 90-95% of all suicide victims have a diagnosable mental disorder at the time of death. We know this through studies that utilize a method called psychological autopsy where after someone dies, one goes back and as best they can reconstructs the person's state of mind and their symptoms at the time of death as ascertained from relatives and co-workers and recent healthcare that the person has received. Within that 90-95% with mental disorders, about half to 3/4 suffer from depression. About 10-15% suffer from the severe mental illness called schizophrenia, and about 15-25% suffer from substance dependence involving alcohol or other drugs.

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Let's cover these mental disorders one at a time. First major depressive disorder. Major depressive disorder is not the same as transient periods of sadness. Major depressive disorder is a clinical syndrome that causes considerable disability, has a number of symptoms associated with it and persistent sadness that is often accompanied by suicidal ideas. In fact 15% of patients who are receiving care for major depression go on to commit suicide at some point in their life, so at a rate of about 1 in 7. Suicide is very common in that risk group. Psychiatric treatment for major depression is ironically extremely successful when it can be initiated, but often the difficulty is identifying people who are depressed and at risk for suicide before their suicide concerns become manifest through their behavior. The treatment for depressed individuals occurs less than half of the time. This is up from about a decade ago when we found that rates were about 25%, so rates are moving in the proper direction, but there's still a deficit of care and recognition for people with these sorts of challenges. An important aspect of treatment for many people with depression, particularly those with suicidal ideas, is anti-depressive medication. It's important to know that one or two classifications of anti-depressants, tricyclic anti-depressants and monoamine oxidase inhibitors, can be very lethal if given in overdose or combined with certain types of other medications. So in treating depression if you're seeing a patient who is on one of these types of medications, it's very important that you limit and carefully quantify the amount of medication that's prescribed to them in order to avoid their use of the treatment to actually commit suicide. Some believe that the most effective treatment for depression overall and an extremely effective treatment for depression when someone is acutely suicidal is electroconvulsive therapy. This remains done on an increasingly common basis in the country. Certain movies such as "One Flew Over the Cuckoo's Nest" that characterized the approach tend to stigmatize it. It's now done in operating rooms in sterile settings, very carefully done under general anesthesia, and it's again maybe the most effective and rapid treatment for people with severe depression. Some have called it the treatment of choice actually for pregnant women with severe depression, highlighting really how safe the approach is as it's currently administered.

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Schizophrenia is an extremely debilitating, although relatively rare, illness associated with suicide. It's not an illness that we see at a high rate in the military because often when it occurs people are discharged from the military with their illness. This is less the case for depression than it is for schizophrenia. However, in our young population in the military, the time of onset of schizophrenia tends to be in the first two to three decades of life so frequently new onset schizophrenia will occur in military settings. About 30% of patients with schizophrenia will attempt suicide, and fully 10% or 1 in 10 will complete suicide over the course of their lifetime. The reason that young people with schizophrenia often commit suicide relates to a high coexisting occurrence of depression. There is a phenomenon called post-psychotic depression where in patients as they get better from some of the hallucinations and delusions that are extremely disabling in schizophrenia that they will develop a period of depression commonly and often during that depressed period suicidal ideas will occur. Another reason that patients with schizophrenia will sometimes commit suicide is the occurrence of what psychiatrists call command auditory hallucinations. This is the person who is hearing voices; these are hallucinatory voices that tell them to take their own life, essentially are instructing them to kill themselves and in some instances will actually instruct them to kill others as well. This is obviously an emergency situation when it occurs, and patients who are experiencing these sorts of auditory hallucinations should be hospitalized. And then a third reason for high suicide rates in patients with schizophrenia is that they don't relate well with others. They tend to be socially isolative and don't form close relationships and these social supports can buffer suicide risk in times of increasing suicidal ideation.

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In substance dependence, perhaps the strongest association with suicide occurs in those who have poly-substance abuse that is that they are using more than one drug or have used more than one drug over the course of their lifetime, but fully 15% of people with alcohol dependence will terminate their life

through suicide, amounting to about 7 to 13,000 people each year. The coexistence of a personality disorder, particularly anti-social personality disorder that is the repeated criminal type of person or the borderline personality which is the person who has a lot of anger and instability of mood and self-harmful behavior, those personality disorders in combination with substance dependence spell a very high likelihood of completed suicide at some point in the course of the individual's life, and then of course along with substance use these substances create distress states frequently by causing adverse events in the people's lives who use them and also as a direct physiologic effect of the drugs themselves, these effects being symptoms of anxiety and depression.

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Dynamic risk factors related to suicide are more clinically relevant variables, that is variables that can change significantly from visit to visit. Obviously if someone is a man or woman or whatever their age might be, those are things that you can't really change as a clinician, but clinical risk factors are listed on the slide that you see now. These include the progression of suicidality, in other words do they have ideas about suicide, is suicide something that they are thinking about. Secondly are they planning to commit suicide. Very often people will think about suicide a lot but never take any active steps such as obtaining a gun or begining to look at a situation or place that they could perform the suicide in order to pull it off, and then thirdly there are people who actually have active plans in place and think a lot about suicide and go through the better part of their life in that way but they, when you talk to them they can actively tell you that they don't intend to commit suicide, sometimes because they don't want to hurt loved ones or for various other reasons. So the progression of suicidality from ideas alone to ideas with planning and, at its most severe, ideas with planning and with active intent to take ones own life. So these are things that should be followed over the course of clinical care. Similarly as I mentioned for the mental disorders that we covered earlier, that symptom severity is an important variable to track, as well as the types of symptoms that the individual is experiencing, anxiety, depression, hallucinations that is false sensory experiences or delusions these are fixed and false beliefs that can be bizarre but are not necessarily bizarre or unusual, substance use, aggression and difficulty with impulsivity. And then perhaps the most critical variable in a patient with a past history of suicide or current suicidal ideas is the development of trusting therapeutic alliance. Discussing something like suicidality as you can imagine is an extremely personal issue and in order to be effective at it, there has to be a very close relationship between patient and healthcare provider, one in which the patient really has no doubt that the healthcare provider is on the patient's side and trying to do what's best for them.

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Other situational risk factors, which are also dynamic risk factors, include factors such as whether or not someone has access to treatment. This is something that you as a healthcare provider can facilitate particularly if you're in a non-mental healthcare setting helping a patient to receive the mental healthcare that they need for suicidal ideas that you identify that they're having. Available social supports; one of the most important mitigating factors in people who experience suicidal ideas is the availability of people around them who can bolster their reason to live and provide a safe environment for them. Occupational status is another important situational risk factor. It's been shown through replicated research that in times of high unemployment, suicide rates in the general population go up, and certainly when people lose jobs they are at increased risk for suicide. And then the final situational risk factor although this is not an exhaustive list, the final one that we'll go over here is the lethal means with which to commit suicide. That is that if you take a given individual who thinks about suicide, obviously if you introduce a weapon such as a pistol, the likelihood of completing that suicide goes way up. So the availability of a lethal means that can be feasibly turned to on the part of the patient is an important situational risk factor and should be assessed in any patient that you see with suicide-related concerns.

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So what is this notion of risk assessment? We talked earlier about risk assessment and reduction, and risk assessment in many respects amounts to quantifying as best you can some of the risk factors that we've reviewed so far and using those risk factors to identify people who are at elevated risk for future

suicide. Along with that risk assessment goes a careful history and physical examination including mental status exam to make sure that you have a good handle on their physical health as well as their mental health. The past psychiatric history is extremely important. People who have past suicide attempts are at markedly increased risk of future suicide attempts and completed suicide, and then the levels of suicidality, which I mentioned earlier, ideas, plan and suicidal intention should be assessed. An appropriate diagnosis should be made both psychiatric diagnosis and physical diagnosis to identify any treatable illnesses that can be managed to reduce suicide risk.

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The mnemonic that you see on your screen is for you if you find it helpful. SAD PERSONS with S standing for sex or gender, A standing for age that is older at greater risk than younger, D standing for depressive disorder and the mnemonic that you see under that SIG E CAPS is a mnemonic that you can find in almost any book describing the vegetative signs and symptoms of depression. PERSONS stands for Previous suicide attempts, persons Employment status, any Recent losses that they have experienced particularly with regard to important relationships, their relationship Status whether they're single or divorced, O stands for Other substances, and N is for No social support and finally S is for Sickness meaning coexisting physical illnesses such as HIV-related illness, cancer, and other chronic diseases that can increase suicide risk.

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So let's move to clinical intervention for people with suicidal ideas. As I mentioned early, it is important to establish close trust and rapport with the individual that you're seeing so that they can freely tell you how they feel with regard to suicide with regard to any plans or intent that they might have. So step one really is establishing and maintaining rapport and close therapeutic alliance. Secondly whenever possible, remove any access that an individual has to lethal means. If someone who is suicidal keeps a weapon at home, take steps to help them to have that weapon removed from their home and put into the hands of someone that they trust. Other lethal means that can be used are the availability of drugs that they're not currently using for therapeutic purposes, you know, left over antidepressants or so on from previous prescriptions, making sure that those are kept secure and away from access to the suicidal individual. Also as I alluded to before, as a primary care provider, it's extremely important for you to escort that person into mental health care. This is certainly an emergency when someone relates to you that they have been thinking particularly if they are planning suicide, and they should be escorted to mental health treatment in the event that you get this history. As has been implied throughout my presentation, efforts to reduce the degree of risk related to risk factors that you can identify in a suicidal person is also very important and activating social support systems. Again this is an emergency. Really the law protects you if you take the right steps, and the right steps in the case of the acutely suicidal individual are to make sure that they are held in a safe environment, and if they are acutely suicidal this can be done without their permission, and support people can be brought into the circumstances without their permission if it's in the best acute interest of the patient from a treatment perspective. All that said, it is important to think about how the impact of hospitalization and the involvement of supports will affect future adherence to therapies. Typically in my clinical experience, involving supports in therapy may be something that the patient is frightened of doing, but over the long hall it enhances their ability to adhere to ongoing treatment that you may initiate for them. And then in addition to these clinical approaches, there is an opportunity to adopt public health approaches,

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and I'd like to return to the Air Force model that has recently received a good deal of publicity for lowering suicide rates in the Air Force down to the lowest level of any of the three branches of the service. In 1997 particularly after the suicide death of Admiral Borda, the chief naval officer at the time, all the services became fairly concerned and attentive and re-engerized to this issue of suicide. It made us all aware that it can affect people at every rank at every level of functioning, and the Air Force initiated a multi-pronged population approach to reduce stigma associated with care.

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The slide on your screen now shows some of the key elements of the program. There was training or there is active training in suicide and violence for Air Force leaders. There is training in dealing with suicidal ideas and relatives and coworkers through other military education. There are published guidelines for how commanders should deal with people in their unit who are experiencing suicidal ideas or have made suicide attempts. Community preventive services have been put into place. The use of psychological autopsies is ongoing to investigate any death that occurs by suicide and identify any way that future programs might have prevented such a death. Critical incidents stress management approaches are regularly performed for following traumatic events which can lead to depressive symptoms and suicidal ideas and a destigmatization in general of the delivery of mental healthcare for people who have depression and related mental illnesses but are functioning effectively within the military. People who need to get the care that can help them to feel better need to know that they can get that care without compromising their capacity to have a stellar career in the military. There is also in the Air Force, an every other year survey involving health risk appraisal on multiple fronts one of which is suicidality and a suicide surveillance program so that careful numbers and retrospective analysis of suicides are ongoing.

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These are the ingredients of the program. The graph that you see now on your screen shows the rate of suicide within the Air Force over the last 10-15 years, and essentially you can see that after the program was implemented in 1997 relatively marked drops in rates of suicides and a drop that has persisted up through year FY02 on this chart.

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The next graph, which is again from the British Medical Journal paper describing the program and its outcomes, you can see that the effects of the program go well beyond just suicide which makes sense because many of the steps to destigmatize care and make the command and coworkers aware of violence in general as well as suicide can have broad positive effects, and you can see consistent reductions in risk of suicide, homicide, accidental deaths and domestic violence.

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So in summary, suicide is a behavior. It's multiply determined and shouldn't be over simplified. It's something that we cannot predict however, we can do our best and effectively reduce risk in anyone who has risk factors of suicide. As a clinician you need to know the risk factors for suicide. You need to assess those risk factors, make appropriate psychiatric and physical diagnoses in the context of suicidal ideas, and perhaps most importantly, knowing the difficulty that we have for any given individual in terms of actually predicting whether they will go on to commit suicide or not, it's very important to be explicit about your therapeutic rationale and to state in medical records why you're doing what you're doing because occasionally it will happen that a patient suicides. If you deal with lots of patients with suicidal ideas, you're bound to have instances where a patient that you're seeing will commit suicide. This is always a devastating event when it happens, but you can put yourself in the best position by making sure that the medical record contains all the steps that you've taken and why you've taken them for the person who has suicidal ideas. And lastly to approach the problem not only from a clinical level but contribute your ideas to population programs that the military and society offers for people who are impacted by these devastating symptoms and behaviors.

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Thanks very much for your attention today.