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Death with Dignity: Medical Assistance in Dying (MAID)

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1. Introduction

Medical assistance in dying refers to a doctor or nurse practitioner helping a person, at their request, to end their life. The person must want to voluntarily and intentionally end their life. Medical assistance can be in one of two ways. Either the doctor or nurse practitioner gives a medicine to the person that causes death, or they prescribe a medicine for the person to take themselves that causes death. For both ways, the doctor or nurse practitioner must be present for the death.

Medical assistance in dying, or MAID, is a complex, multilayered and deeply personal issue and anyone thinking about this should talk with their family, their loved ones and anyone else who can support them through the process.

"Medically assisted dying" applies to all eligible patients have a terminal condition, whereas suicide refers to cases of individuals choosing to end their lives without medical assistance. Suicide is a choice "to end an otherwise open-ended span of life, whereas the person with a terminal illness does not necessarily want to die but cannot do so.

Eligibility for MAID

Eligibility for assisted dying as applicable to all who meet the following criteria:-

1) Should be an adult, 18 years or older.
2) Should be able to make their own decisions about their health.
3) Should be suffering from a serious and incurable illness, disease or disability ("a grievous and irremediable medical condition that is in an advanced state of irreversible decline in capability and causing physical or psychological suffering that is intolerable to the patient and that cannot be relieved under conditions that the patient considers acceptable with the patient's natural death becoming reasonably foreseeable (less than 6 months life expectancy
4) Should be free from any pressure or influences in their opting to die.
5) Should be able to comprehend what assisted dying means to them and their family. The patient must have a decision making capacity and able to understand the information that is relevant to making a decision about their health
6) Should give a formal informed consent to receive medical assistance in dying after having been informed of the means that are available to relieve their suffering, including palliative care.
7) Should be able to tell everyone what they want right up until the time they are assisted to die

2. Procedure

At least two people who are at least 18 years of age must witness their signing their MAID form and none of them having benefit from their death or involved as direct care providers. Two different doctors or nurse practitioners must independently assess the patient separately to make sure that he or she is eligible for an assisted death and capable of deciding the same. The witnesses must not be a beneficiary under the will of the patient making the request, or a recipient, in any other way, of a financial or other material benefit resulting from that patient's death; They must also not be an owner or operator of any health care facility at which that patient making the request is being treated or any facility in which that patient resides or involved in providing health care services to the patient making the request; or, be directly providing personal care to the patient making the request.

By law, the patient must wait at least 10 days from the time of signing their request before assisted death is set in motion so that they can reflect on their decision and make sure that MAID is what they want. This waiting period can be abbreviated if their death is fast approaching or if they could soon lose their ability to tell others what they want. Patients requesting medical assistance in dying can change their mind and rescind their request at any time.

Advanced dementia precludes participation because the patient is not mentally capable of making their own healthcare decisions

A patient cannot write their wishes for medical assistance in dying in an advance directive or in their living will and the patient must be able to provide consent at the time medical assistance in dying occurs.

If the patient is unable to sign the consent, another person can be assigned the role of a designate, who may sign for the individual. This person must be at least 18 years of age, understand that the patient is requesting assisted dying; and, not benefit under the patient's will. The signing must be done in the presence of, and under the direction of, the patient. If a

patient has communication challenges, regional speech language pathologists can be summoned to assist.

For patients who do not speak English an interpreter can be used. The physician must communicate with patients with Limited English Proficiency through a Medical Interpreter. The family members cannot serve as interpreters. A professional medical interpreter must do the interpretation during the clinical encounter. Family members cannot be present when the patient is making the request for assisted death through the interpreter to the physician. The written request for physician assisted death may be prepared in English even when the conversations with the patient are in the patient's preferred language through a medical interpreter. The interpreter must sign a declaration (under penalty of perjury) that the patient's request is voluntary and coercion and that the patient understood the content in the written in the official form requesting aid in dying.

In the event that a patient cannot sign their own written request and they require a designate to do this, it is the responsibility of the patient, the designate, and the two assessing practitioners to ensure that at all times they are acting in accordance with the expressed wishes of the patient.

Medical assistance in dying may take place in a hospital, long-term care facility, or other community locations such as a patient's home, personal care home or private clinic depending on the patient's wishes, and the feasibility of their requests.

It is up to the patient to determine with whom they would like to discuss their decision to opt for MAID and the decision to have family and friends with the patient when they die is open for discussion between the patient and their health care provider, considering all factors including the patient's wishes, cultural sensitivity, feasibility and the safety of all involved. (1,2,3,4)

Legalizing MAID

Canada's Parliament passed Bill C-14 in 2016, legalized assisted dying. Since then, more than 13,000 people have chosen to end their lives that way. Oregon's 1994 Death with Dignity Act (ORS 127.8 *ff*) was the nation's first law authorizing mentally capable, terminally ill adults with 6 months or less to live to request a doctor's prescription for medication they could decide to take to peacefully end their suffering if it became unbearable. It was enacted in 1994 and taken into effect in 1997[1]. Since then, 6 more states—Washington, Montana, Vermont, California, Colorado, and Hawaii (Hawaii's law does not take effect until Jan. 1, 2019) and the District of Columbia (DC)—have authorized medical aid in dying. Belgium and Netherlands have also legalized MAID. (4, 5, 6, 7, 8,9) Different health authorities reported MAID rates of between 5% and 0.5%.

Drugs Prescribed for MAID

Drugs can be administered orally or intravenously. The main advantage of offering patients an oral option are:

1) Maximal autonomy
2) Minimal side effects (i.e. burning, nausea, vomiting, regurgitation)
3) Fast onset of unconsciousness
4) Minimal time between sleep and death
5) High efficacy (lower failure rate or need for backup IV rescue)
6) Palatability and tolerance
7) Stability when compounded
8) Easy accessibility and reasonable cost

Oral medication absorption is probably most efficacious on an empty stomach. By law, the patient has to self-administer the lethal medication within a 10 minute period. No one should help the patient take the lethal pills all barbiturates have quite a bitter taste which makes the compounded solutions less palatable. Bitter taste slows gastric emptying and often induces nausea. The large doses that are required in MAID provision make it necessary to dispense the barbiturate-containing product in a solution or suspension, rather than as capsules and this format further amplifies the bitter taste.

Coma inducing medication should be preceded by an antiemetic to reduce nausea, vomiting, and regurgitation to promote maximal delivery of medication. The recommended antiemetic regimen includes metoclopramide 20mg plus either ondansetron 8-24mg, 2 mg haloperidol or dexamethasone 8mg taken orally 1 hour prior to the coma inducing medication.

Metoclopramide blocks dopamine and serotonin receptors to prevent and treat nausea and vomiting, and enhances gastric emptying and gastrointestinal motility. Ondansetron is a selective 5- HT3 receptor antagonist that blocks serotonin to prevent and treat severe nausea and vomiting. Haloperidol is a butyrophenone that nonselectively blocks postsynaptic dopaminergic D2 receptors in the brain and chemoreceptor trigger zone. Dexamethasone is a corticosteroid that is often used with a 5-HT3 antagonist for highly emetic chemotherapy. The mechanism of its antiemetic action is unknown. Inhaled cannabis, through either smoking or vaporizing, results in an almost immediate onset, and peak within minutes and administered approximately 5 to 10 minutes before consumption of the MAID medication. (10)

15 g Secobarbital 15g by mouth is used as a single agent as it has a faster onset of action compared to phenobarbitone. If secobarbital is unavailable, 15 g pentobarbitone is the next choice. In such large doses, barbiturates will result in respiratory arrest and subsequent cardiac arrest. In a joint effort in the Netherlands between their national body of physicians and pharmacists, a palatable "Mixtura Nontherapeutica Pentobarbital" formulation has been concocted. This formulation includes 15 g Pentobarbital sodium (or secobarbital) 16.2 g Alcohol 96% V/V, 15 g water 15, 10.4 g Propylene glycol 250 mg Saccharin sodium, 65 g simple sugar syrup simplex, 1 drop star anise oil. Preparation instructions are to mix the purified water, propylene glycol and the alcohol, dissolve the Pentobarbital sodium (or Secobarbital) in this mixture whilst stirring, dissolve the

saccharin sodium in this mixture and mix with the sugar syrup and the star anise oil.

Phenobarbital/chloral hydrate/morphine combination is used in British Columbia for oral MAID. However oral mucosal burning with chloral hydrate and the longer mean onset of action of phenobarbitone and tolerance to morphine given for chronic pain states makes it a poor choice.

DDMP1 and DDMP2 protocol has been developed in Washington. DDMP1 consists of 25 mg digoxin, 0.5 g diazepam, 10 g morphine and 2 g propanolol. This is a low cost oral regime with an average time to sleep and death of 9 and 187 minutes respectively. Some deaths have taken even 1860 minutes, but none have recovered. This prompted the DDMP2 formulation consisting of 50 mg digoxin, 1g diazepam, 15 g morphine and 2 g propanolol that has an average time to sleep and death of 8 and 145 minutes respectively. Some deaths can take 450 minutes, but again, no person has awoken after the DDMP2 mixture.

Opioids produce coma through central respiratory depression and inducing respiratory arrest and subsequent cardiac arrest. Nausea and vomiting associated with opioids can result in their regurgitation or expulsion precluding their complete absorption from the gastrointestinal tract. Opioids also cause slowing of gastric motility which may delay the absorption of co-administered medications.

Digoxin is a cardiotonic glycoside that is primarily used in the treatment of heart failure, atrial fibrillation or flutter, and paroxysmal atrial tachycardia. Large doses will produce lethal arrhythmia and/or conduction block, which will lead to cardiac arrest. Doses of digoxin greater than 25mg has a 100% mortality rate.

Propanolol is a non selective beta blocking agent used to control arterial hypertension, in post infarct prophylaxis, and in several forms of cardiac arrhythmias. The drug reduces cardiac conduction and contractility and in high doses, induces cardiac arrest

Manitoba, British Columbia, Northwest Territories and Sasketchewan have developed an oral MAID protocol that involves premedication with ondansetron 8mg and metoclopramide 20mg 1 hour prior to the procedure for antiemetic prophylaxis. The coma inducing compound is a mixture of 20 g phenobarbital, 20 g chloral hydrate and 3 g morphine. The protocol also allows Haloperidol 5mg subcutaneously or intravenously if emesis is encountered and sublingual 05-4.0 mg lorazepam 5-10 minutes prior to taking the coma inducing compound to alleviate anxiety.

Alberta and Yukon have developed an oral MAID protocol that involves premedication with haloperidol 2mg and metoclopramide 20mg 1 hour prior to the procedure for antiemetic prophylaxis. If there is an allergy or contraindication to metoclopramide, 8 mg ondansetron 8mg is suggested instead. The coma inducing compound is the DDMP2 mixture. For intravenous (IV) routes, the practitioner in attendance needs to establish an IV line or use an existing PICC line to administer MAID medications on a date, and at a time and location mutually agreed upon between patient and practitioner. The prescribing physician needs to be present at the time and ensure the lethal dose of medication is delivered securely and successfully to cause death. Also, in case the oral medication effect is delayed or fails to result in death, the attending physician needs to obtain vascular access and administer IV medications to ensure death.

20 mg dose of midazolam is administered, followed by a lignocaine flush before injecting 1000 mg propofol over 5 minutes until there is no response to verbal stimuli, slow, weak or absent pulse, slow, shallow or absent respiration and absence of eyelash reflex. This is followed by IV 200mg rocuronium/100mg atracurium/30mg cisatracurium.

After confirmation of death, the attending physician may leave the room briefly to allow the family to grieve privately and then remove the IV access and apply a dressing on the site. PICC line/Portacath can be left in place. The death certificate is then issued indicating the cause of death as MAID arising out of the underlying grievous and irremediable medical condition and considered as a natural death and the body handed over to the family members for last rites. A MAID reporting form must be completed and faxed to the Coroner's Office within 48 hours.

Occasionally patients wish to donate organs or tissue such as their corneas. This will need to be planned well in advance with the appropriate teams for harvesting soon after MAID.

3. Conclusion

Medical assistance in dying (MAID) is a humane manner of ending life for patients in an advanced state of irreversible decline in capability and enduring extreme physical or psychological suffering and where life expectancy is deemed to be less than 6 months. It preserves the autonomy and dignity of the patient and is also merciful to the carers and family members of the patient. This option must be made legal and available the world over. All family practice residents need to know the basics about discussing end-of-life care with patients, their caregivers, and loved ones. This might entail imparting knowledge, skills, and attitudes with respect to medical assistance in dying (MAID) (12)

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