Title: Pharmacologic Review of Medical Aid in Dying

Author: Peter J. Rice, PharmD, PhD, BCPS, FAPhA

Statement of the Problem: Medical Aid in Dying (MAiD) seeks to allow patients to choose a peaceful, pain-free death when facing terminal illness. This simple goal can be compromised by factors related to drug(s), disease, and individual patient.

Background: As MAiD has evolved into a legally-recognized and medically-supported activity, MAiD drugs have changed based on drug properties and effects.

Purpose: This evidence-based practice project identified, described, and assessed drugs used for MAiD and how their pharmacologic properties might optimize drug choices for individual patients.

Methods: Targeted literature searches were conducted in series. Goals and drugs used for MAiD were identified from lay and professional publications and discussion with pharmacists. Scientific foundations were established based largely on tertiary literature. Then, targeted searches were conducted for individual drugs, their chemical and pharmacokinetic properties, and the relationship of individual MAiD drugs to foundational principles. Toward the end of the project, video recordings were identified that confirmed and extended earlier information.

Findings: Barbiturates are favored MAiD drugs based on their unique chemistry. Diazepam, as a base with a pK of 3.4 and good lipid solubility, is immediately absorbed starting in the stomach and acts within minutes. Morphine, has poor qualities for stomach absorption and will saturate opioid receptors in the intestines to slow motility. Digoxin is empirically administered prior to other drugs as a strategy to coincide peak concentrations with those of amitriptyline. Amitriptyline has been added for its synergistic toxicity but is also synergistic with morphine for GI slowing and has the slowest absorption.

Implications: Drugs used in MAiD have evolved to their current formulations as prescribers have adapted to optimize drug effectiveness. Formulation modifications may further optimize current MAiD cocktails through improvements in absorption or substitution of more potent drugs.