# Assessing Conversion to Transdermal Fentanyl or Methadone During Transition on Hospice Admission

Sul Gi Chae, PharmD[1*]; Kathryn Walker, PharmD, BCPS, CPE[2]; Mary Lynn McPherson, PharmD, MA, MDE, BCPS, CPE[1]
1. University of Maryland School of Pharmacy 2. Medstar Health

## Background

- Transdermal fentanyl (TDF) or oral methadone are often selected as effective options for patients transitioning to hospice to allow prolonged pain relief and minimize the need for frequent re-dosing[1,2]
- Unpredictable pharmacokinetics of methadone and TDF could lead to potential dosing errors and patient harm during the transition to hospice[1,2,3]
- Using criteria adopted from Seasons Hospice protocol and literature search, a standardized algorithm was created and approved by research investigators prior to data collection[4]

## Description of project

- Retrospective study approved by University of Maryland and MedStar IRB

### Study Aims

- Determine if TDF/methadone initiation and transitions are done appropriately in the week prior to hospice admission.

### Inclusion Criteria

- Patients who are admitted to Seasons inpatient/home hospice following MedStar hospitalization.
- Dosing changes (initiation, titration) of methadone/TDF in last 7 days prior to hospice admission.

### Exclusion Criteria

- Patient who do not meet the inclusion criteria.

## Methods

- Patients identified by reviewing data of patients who discharged by death from Seasons Hospice between July 1 2015 - June 30 2019 until the convenience sample of 30 patients is met.
- Obtain the previous hospitalization's oral morphine equivalent (OME) and time exposure from MedStar Health electronic health record to guide the analysis in determining the appropriate drug initiation or titration.
- A standardized algorithm guided for objective evaluation of each drug initiation or titration of methadone or TDF.

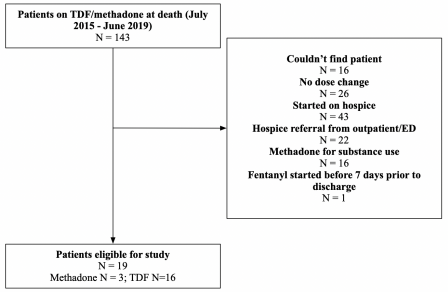
## Algorithm to Determine Appropriateness

| Methadone Initiation | | Methadone Titration |
|---|---|---|
| **Opioid Naïve**<br>• Started dose between 2.5-7.5 mg/day of methadone<br>If significant drug interaction,* dose was reduced by 25-30% | **Opioid Tolerant**<br>• Total daily OME: 0-60 mg → Followed opioid naïve dosing<br>• Total daily OME: 61 – 199 mg AND <65 yo → 10 mg OME: 1 mg PO methadone. Do not exceed 30-40 mg/day<br>• Total daily OME: ≥200 mg and/or >65 yo → 20 mg OME: 1 mg PO methadone. Do not exceed 30-40 mg/day<br>• If significant drug interaction,* dose was reduced by 25-30% | • Patient was on current dose ≥ 5 days.<br>• Dose was increased no more than 5 mg/day.<br>• If receiving >30-40 mg/day, dose was increased by no more than 10 mg/day.<br>• If significant drug interaction,* dose was reduced by 25-30% |

***Strong CYP3A4 inhibitors**

| TDF Initiation | TDF Titration |
|---|---|
| • Patient is not cachectic (cachexia: BMI >16 and/or albumin <3 w/ cancer dx).<br>• If TDF was initiated and patient's rescue opioids requirements (OME/day) has stayed the same OR increased for the next 2-3 days, this was deemed TDF failure.<br>• Patient received ≥ 60 mg OME ≥7 days prior to TDF initiation.<br>• Conversion from OME to TDF: 2 mg OME: 1 mcg/h TDF. | • Patient was on current dose of TDF for ≥3 days<br>• Dose was 1) increased by 25 mcg/hr 2) rescue opioid OME was calculated for last 2-3 days, TDF was increased based on the equivalent amount 3) increased by 50 mcg/hr if patient had significant pain (>4 rescue doses/day) and was already on ≥50 mcg/hr strength |

## Results

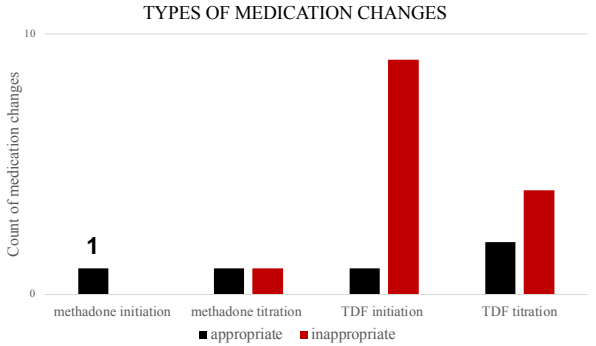




- Duragesic (Fentanyl Transdermal System) Prescribing Information.
- Dolophine (Methadone Hydrochloride tablets) Prescribing Information.
- Food and Drug Administration. Public health advisory: methadone use for pain control may result in death and life-threatening changes in breathing and heartbeat. Rockville, MD: Food and Drug Administration; 2006.
- McPherson ML. Demystifying Opioid Conversion Calculations: A Guide for Effective Dosing. American Society of Healthsystem Pharmacists Publications, 2nd edition; 2018, Bethesda, MD, p. 163


## Outcomes

- Out of 19 patients who were qualified for the study, 5 patients had appropriate methadone/TDF initiation/titration while 14 patients had inappropriate methadone/TDF initiation/titration.




| | Appropriate dosing (n=5) | Inappropriate dosing (n=14) |
|---|---|---|
| PC w/PharmD, n (%) | 3 (60%) | 1 (7%) |
| PC no PharmD, n (%) | 1 (20%) | 8 (57%) |
| No PC, n (%) | 1 (20%) | 5 (36%) |

## Limitations

- Small sample size
- Unclear documentation in electronic health record about rationale for changes

## Conclusion

- More than half of initiation or titration of high-risk opioids (i.e., methadone and TDF) were inappropriate
- TDF fentanyl initiation made up the majority of inappropriate dose changes in patients who discharged on hospice
- Changes made with PC pharmacist involvement were more likely to be appropriate