Retrospective chart review: Impact of the End of Life Order Set at an Academic Hospital Pre and Post-Implementation

Grace Warmels MD CCFP[1], Anne Roberts RN[2], John Faissal Haddad[3], Marie-Hélène Chomienne MD CCFP MSc [2,4], Valérie Gratton MD CCFP [2,4,5]

[1]University of Ottawa Department of Medicine, [2]Hôpital Montfort, [3]University of Ottawa Faculty of Medicine, [4]Institut du Savoir Montfort, [5]Division of Palliative Care, Department of Medicine, University of Ottawa

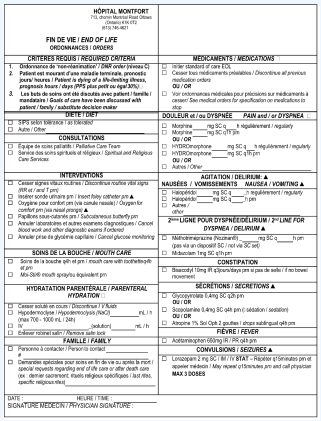
BACKGROUND & OBJECTIVE

Many gaps in end of life (EOL) care exist for patients dying in acute care hospitals, including inadequate symptom management, lack of clear communication, and invasive interventions. The End of Life Order set (EoLOS) was developed by the palliative care consultation service to support primary care providers delivering inpatient EOL care. The bilingual tool includes non-pharmacological measures and medications to be prescribed for common EOL symptoms.

Objective: To quantify changes in EOL care at our academic hospital from before and after the EOLOS was implemented

End of Life Order Set (EOLOS)

EOLOS tool: The combination of a literature review with the collaboration of a multi-disciplinary team served to create the EoLOS tool in 2015. During its implementation, nurses and medical staff were trained several times by the palliative care team on the optimal use of the EoLOS. The EoLOS was initiated if patients met specific criteria: 1-Documented do-not-resuscitate (DNR) order, 2-In line with goals of care of patient/family, 3- Palliative Performance Scale ≤ 30% or prognosis hours to days.



HÔPITAL MONTFORT
713, chemin Montreal Road, Ottawa
(Ontario) K1K 0T2
(613) 746-4621

FIN DE VIE / *END OF LIFE*
ORDONNANCES / *ORDERS*

CRITÈRES REQUIS / *REQUIRED CRITERIA*
1. **Ordonnance de 'non-réanimation' / *DNR order (niveau C)***
2. **Patient est mourant d'une maladie terminale, provoquée *pour* heures / *Patient is dying of a life-limiting illness, expected to die within days or hours*** (Palliative Performance Scale ≤ 30%)
3. ***Goals of care* sont alignés avec le patient / famille / mandataire / *Goals of care have been discussed with patient / family / substitute decision maker***

DIÈTE / *DIET*
☐ NPO (eau autorisé / *as tolerated*)
☐ Autre / *Other* _____

CONSULTATIONS
☐ Équipe de soins palliatifs / *Palliative Care Team*
☐ Service des soins spirituels et religieux / *Spiritual and Religious Care Services*

INTERVENTIONS
☐ Cesser signes vitaux routines / *Discontinue routine vital signs (RR et / and T pm)*
☐ Insérer sonde urinaire pm / *Insert foley catheter pm* ▲
☐ Oxygène pour confort pm (via canule nasale) / *Oxygen for comfort pm (via nasal prongs)* ▲
☐ Papillons sous-cutanés pm / Subcutaneous butterfly pm
☐ Annuler laboratoires et autres examens diagnostiques / *Cancel blood work and other diagnostic exams if ordered*
☐ Annuler prise de glycémie capillaire / *Cancel glucose monitoring*

SOINS DE LA BOUCHE / *MOUTH CARE*
☐ Soins de la bouche q4h et pm / *mouth care with toothettes q4h et pm*
☐ Mix-Stick mouth spray/*ou liquoderm pm*

HYDRATATION PARENTÉRALE / *PARENTERAL HYDRATION* :
☐ Cesser soluté en cours / *Discontinue IV fluids*
☐ Hypodermoclyse / *Hypodermoclysis (NaCl)* _____ mL / h (max 700 - 1000 mL / 24h)
☐ IV _____ (*solution*) _____ mL / h
☐ Enlever rotinal salin / *Remove saline lock*

FAMILLE / *FAMILY*
☐ Personne à contacter / *Person to contact* _____
_____
☐ Certaines spécialités pour soins en fin de vie ou après la mort / *special requests regarding end of life care or after death care (ex.: dernier sacrement, rituels religieux spécifiques / last rites, specific religious rites)*_____

DATE : _____ HEURE / TIME : _____
SIGNATURE MÉDECIN / *PHYSICIAN SIGNATURE* : _____

MÉDICAMENTS / *MEDICATIONS*
☐ Initier standard of care EOL
☐ Cesser tous médicaments préalables / *Discontinue all previous medication orders*
☐ Voir / *OR*
☐ Voir ordonnances individuelles pour prescriptions au médicaments à *cesser / See medical orders for specification on medications to stop*

DOULEUR et / ou DYSPNÉE / *PAIN and / or DYSPNEA* :
☐ Morphine ____ mg SC q ____ h régulièrement / *regularly*
☐ Morphine ____ mg SC ×1 PRN
OU / OR
☐ HYDROmorphone ____ mg SC q ____ h régulièrement / *regularly*
OU / OR
☐ HYDROmorphone ____ mg SC q 1H prn
OU / OR
☐ Autres / *Other* _____

AGITATION / DELIRIUM ▲
NAUSÉES / VOMISSEMENTS / *NAUSEA / VOMITING* ▲
☐ Halopéridol ____ mg SC q ____ h régulièrement / *regularly*
☐ Halopéridol ____ mg SC q ____ h prn
☐ Autres / *other* _____

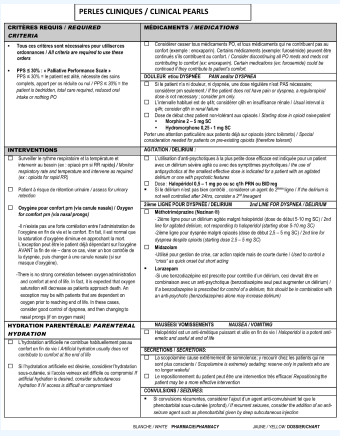
2ième LIGNE POUR DYSPNEE/DELIRIUM / *2nd LINE FOR DYSPNEA / DELIRIUM* ▲
☐ Méthotrimeprazine (Nozinan®) ____ mg SC q ____ h prn
(pas via un dispositif SC / *not via SC set*)
☐ Midazolam 1mg SC q1h prn

CONSTIPATION
☐ Bisacodyl 10mg IR q3jours/*days prn si pas de selle / if no bowel movement*

SÉCRÉTIONS / *SECRETIONS* ▲
☐ Glycopyrrolate 0,4mg SC q3h prn
OU / OR
☐ Scopolamine 0,4mg SC q4h prn (/ sédation / *sedation*)
OU / OR
☐ Atropine 1% Sol Opth 2 gouttes / *drops sublingual q4h prn*

FIÈVRE / *FEVER*
☐ Acétaminophen 650mg IR / PR q4h prn

CONVULSIONS / *SEIZURES* ▲
☐ Lorazepam 2 mg SC / IV STAT ; répéter q15minutes prn et aviser médecin / *May repeat q15minutes prn and call physician* **MAX 3 DOSES**



PERLES CLINIQUES / CLINICAL PEARLS

CRITÈRES REQUIS / *REQUIRED CRITERIA*
- **Tous ces critères sont nécessaires pour utiliserces ordonnances / *All criteria are required to use these orders***
- **PPS ≤ 30% = « Palliative Performance Scale »** PPS ≤ 30% = le patient est alité, nécessite des soins complets, *aspect per os réduite ou nul / PPS ≤ 30% = the patient is bedridden, total care required, reduced oral intake or nothing PO*

INTERVENTIONS
☐ Surveiller le rythme respiratoire et la température et intervenir au besoin (ex : oxiplus pm ou RR rapide) / *Monitor respiratory rate and temperature and intervene as required (ex : oxiplus for rapid RR)*
☐ *Patient à risque de rétention urinaire / assess for urinary retention*
☐ **Oxygène pour confort pm (via canule nasale) / Oxygen for comfort pm (via nasal prongs)**

-Il n'existe pas une forte corrélation entre l'administration de l'oxygène en fin de vie et le confort. En fait, il est normal que la saturation d'oxygène diminue en approchant la mort. L'acception peut être le patient déjà dépendant sur l'oxygène AVANT la fin de vie – dans ce cas, viser un bon contrôle de la dyspnée, puis changer à une canule nasale (ou sur masque d'oxygène).

-There is no strong correlation between oxygen administration and comfort at end of life. In fact, it is expected that oxygen saturation will decrease as patients approach death. An exception may be with patients that are dependent on oxygen prior to reaching end of life. In these cases, consider good control of dyspnea, and then changing to nasal prongs (if on oxygen mask).

HYDRATION PARENTERALE/ *PARENTERAL HYDRATION*
** L'hydratation artificielle ne contribue habituellement pas au confort en fin de vie / *Artificial hydration usually does not contribute to comfort at the end of life*
☐ Si l'hydratation artificielle est désirée, considérer l'hydratation sous-cutanée, si l'accès veineux est difficile ou compromis / *If artificial hydration is desired, consider subcutaneous hydration if IV access is difficult or compromised*

MÉDICAMENTS / *MEDICATIONS*
☐ Considérer cesser tous médicaments PO, et tous médicaments qui ne contribuent pas au confort (exemple : anxiolytiques). Certains médicaments (exemple: furosémide) peuvent être continués s'ils contribuent au confort / *Consider discontinuing all PO meds and meds not contributing to comfort (ex: anxiolytics). Certain medications (ex: furosemide) could be continued if they contribute to patient's comfort.*

DOULEUR ET/OU DYSPNÉE / *PAIN and/or DYSPNEA*
☐ Si le patient n'a ni douleur, ni dyspnée, une dose régulière n'est PAS nécessaire, considérer *pm seulement / If the patient does not have pain or dyspnea, a regularized dose is not necessary : consider pm only.*
☐ L'intervalle habituel est de q4h, considérer q8h en insuffisance rénale / *Usual interval is q4h, consider q8h in renal failure*
☐ Ajuster la dose de morphine/considérant une opioïde / *Starting dose in opioid naive patient*
- **Morphine 2 – 5 mg SC**
- **Hydromorphone 0,25 – 1 mg SC**

Porter une attention particulière aux patients déjà sur opioïdes (donc tolérants) / *Special consideration needed for patients on pre-existing opioids (therefore tolerant)*

AGITATION / DELIRIUM
☐ L'utilisation d'anti-psychotiques à la plus petite dose efficace est indiquée pour un patient avec un délirium sévère agité ou avec des symptômes psychotiques / *the use of antipsychotics at the lowest effective dose is indicated for a patient with an agitated delirium or case with psychotic features*
☐ Dose : **Halopéridol 0,5 – 1 mg po ou sc q1h PRN ou BID mg**
- Si le délirium n'est pas bien contrôlé, considérer un agent du 2ième/*If the delirium is not well controlled after 24hrs, consider a 2nd line agent*

2ième LIGNE POUR DYSPNEE/DELIRIUM / *2nd LINE FOR DYSPNEA / DELIRIUM*
☐ **Méthotrimeprazine (Nozinan ®)**
2ième ligne pour un délirium agitée malgré halopéridol (dose de départ 5-10 mg SC) / 2nd line for agitated delirium, not responding to haloperidol (starting dose 5-10 mg SC)
-2ième ligne pour dyspnée malgré opioïdes (dose de départ 2.5 – 5 mg SC) / 2nd line for dyspnea despite opioids (starting dose 2.5 – 5 mg SC)
☐ **Midazolam**
Utilisé pour gestion de crise, car action rapide mais de courte durée / Used to control a "crisis" as quick onset but short acting
- **Lorazepam**
Si une benzodiazépine est prescrite pour contrôle d'un délirium, ceci devrait être en combinaison avec un anti-psychotique (benzodiazépine seul peut augmenter un délirium) / If a benzodiazepine is prescribed for control of a delirium, this should be in combination with an anti-psychotic (benzodiazepines alone may increase delirium)

NAUSÉES/ VOMISSEMENTS / NAUSÉE / VOMITING
☐ Halopéridol est un anti-émétique puissant et utile en fin de vie / *Haloperidol is a potent anti-emetic and useful at end of life*

SECRÉTIONS / SECRETIONS
☐ Le scopolamine cause souvent/seul de somnolence, y réservé d'abord, les patients que ne sont plus conscients / *Scopolamine is extremely sedating: reserve only in patients who are no longer wakeful*
☐ Le repositionnement du patient peut être une intervention très efficace/ *Repositioning the patient may be a more effective intervention*

CONVULSIONS / *SEIZURES*
- Si convulsions récurrentes, considérer l'ajout d'un agent anti-convulsivant tel que le phenobarbital sous-cutanée (protocol) / *If recurrent seizures, consider the addition of an anti-seizure agent such as phenobarbital given by deep subcutaneous injection*

BLANCHE / *WHITE* **PHARMACIE/*PHARMACY*** JAUNE / *YELLOW* **DOSSIER/*CHART***

DEFINING COMPLIANCE & METHODS

Subjects: Retrospective study performed on charts from 295 expected inpatient deaths at an academic hospital from September 2014-2015 (before EoLOS was introduced), and from September 2016 to 2017 (one year after EoLOS was implemented).

Measurements: Metrics of palliative best practices were defined through literature review and in conjunction with the palliative care consult team. Compliance with best practices were quantified in each chart for the last 48 hours of life. A chart was 'compliant' if all of the following 3 criteria were met:

1) Goals of care:
   The presence of a DNR order *and*
   Indication in the medical orders that death is anticipated
2) Fewer than 25% of invasive interventions present in the last 48hrs of life*
3) More than 75% of common EOL medications present at time of death*

*The percentages for medications and interventions are chosen to allow for individual flexibility

MAIN RESULTS

Uptake: 75% of expected deaths in the intervention group included a completed EoLOS demonstrating acceptability amongst users

The intervention group demonstrated:

1) Increased overall compliance with best practices (Control 30%, Intervention 64%, p= < 0.001)
2) Increased rate of consultation to spiritual care (from 41% to 62% p=<0.001) and palliative care (from 57% to 74%, p=0.002)
3) Increased DNR order and clear documentation of anticipated death (see table)
4) Increased rate of prescription for most palliative medications (see table)
5) Decreased rates of some invasive medical interventions at EOL (see table)

	Control (Sept 2014-Sept 2015)	Intervention (Sept 2016-Sept 2017)	p-value
Communication			
DNR presence (%)	90	100	≤ 0.001
Documentation of anticipated death (%)	72	92	≤ 0.001
Medications			
Antipsychotics (%)	69	84	0.002
Benzodiazepines (%)	63	86	≤ 0.001
Anticholinergics (%)	70	87	≤ 0.001
Acetaminophen (%)	60	87	≤ 0.001
Opioids (%)	96	99	NS
Interventions*			
High-flow oxygen (%)	18	10	0.036
Glucoscans (%)	12	5	0.045
IV antibiotics (%)	23	11	0.005
DVT/PE prophylaxis (%)	19	10	0.038

* Differences in blood transfusions, blood work, imaging and RACE calls in the last 24 hours of life were not significant

CONCLUSION

Using an EoLOS provides a framework to increase the likelihood that palliative care best practices are employed for patients who are imminently dying.

The EoLOS predicts increased consultation with palliative and spiritual care services, and correlates with increased availability of common palliative medications and discontinuation of invasive therapies. It also supports better communication of goals of care for the treating team. We believe that this translates into improved management of patients at end of life in an acute care hospital.

The EoLOS is not a substitute for quality, individualized palliative medicine, and should be used to supplement the provider's clinical judgement in providing palliative care. It is a tool to be used alongside education and supportive policies. Understanding the impact of the EoLOS as well as the care and needs of imminently dying hospitalized patients is crucial for ongoing quality improvement.

CONTACT

Dr. Grace Warmels gwarmels@toh.ca Dr. Valérie Gratton valeriegratton@montfort.on.ca

www.PosterPresentations.com