

## Supplementary Online Content

Grudzen CR, Richardson LD, Johnson PN, et al. Emergency department–initiated palliative care in advanced cancer: a randomized clinical trial. Published online January 14, 2016. *JAMA Oncol*. doi:10.1001/jamaoncol.2015.5252.

**eTable 1.** Eligibility Screening Table

**eFigure 1.** CONSORT Flow Diagram

**eTable 2.** Baseline Characteristics of the Study Participants

**eTable 3.** Health Care Utilization: Hospice Use

**eTable 4.** Health Care Utilization: Hospital Days

**eTable 5.** Health Care Utilization: ICU Admission

This supplementary material has been provided by the authors to give readers additional information about their work.

## eTable 1: Eligibility Screening Table

### Advanced Cancer Staging Criteria

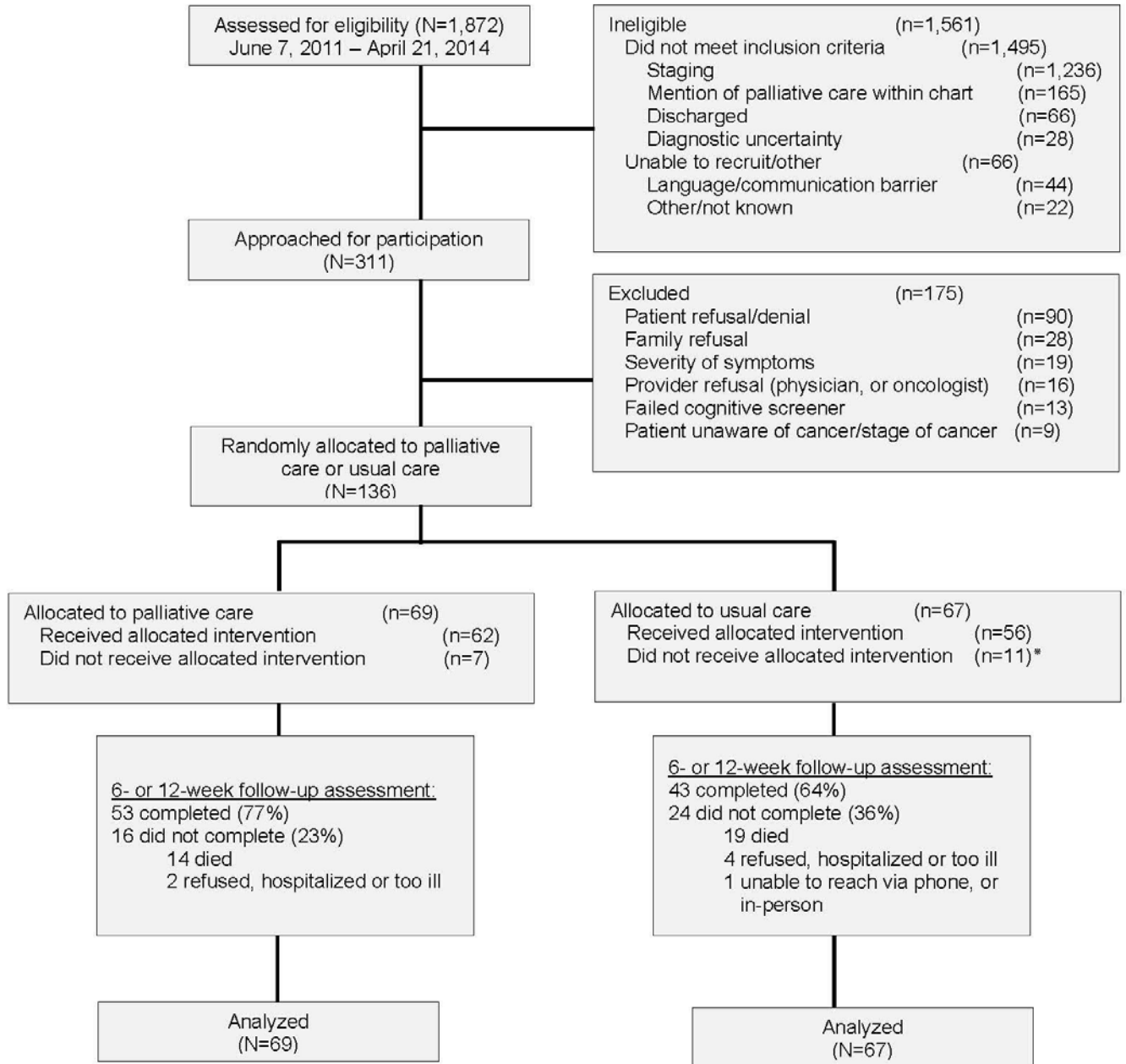
Complete form for exclusions only if patient meets criteria on this decision tree.

Circle all that apply (you must circle at least one from column B and/or column C in order for subject to be eligible for participation): Column A must be circled.

<b>A</b>	<b>B</b>	<b>C</b>
Laryngeal/Throat/Nasopharyngeal/Mouth a.k.a Head and Neck	Stage III Stage IV	"metastatic to", "locally advanced", "spread to regional LN" "refusing surgery/chemo", "not a surgical candidate", recurrent, other ( <i>specify</i> ___)
Lung or Non-small cell lung cancer (NSCLC)	Stage IIIb Stage IV	"unresectable", "metastatic", "mets to", "refusing surgery/chemo" "not a surgical candidate", recurrent, other ( <i>specify</i> ___)
Lung Small Cell	Extensive Stage	"metastatic", "mets to", "refusing chemo", recurrent, other ( <i>specify</i> ___)
Mesothelioma	Stage III Stage IV	"unresectable", "metastatic", "mets to", "refusing surgery/chemo" "not a surgical candidate, recurrent, other ( <i>specify</i> ___)
Breast	Stage IV	"metastatic", "mets to", "spread to", other ( <i>specify</i> ___)
Esophageal	Stage III Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "locally advanced", "not a surgical candidate", other ( <i>specify</i> ___)
Stomach/Gastric	Stage III Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "locally advanced", "not a surgical candidate" (exception for stage II gastric CA, not a surgical candidate is ELIGIBLE), other ( <i>specify</i> ___)
Pancreatic	Stage III Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "locally advanced", "not a surgical candidate", other ( <i>specify</i> ___)
Gallbladder/Bile Duct/Cholangio/Ampullary	Stage II Stage III Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "locally advanced", "not a surgical candidate", other ( <i>specify</i> ___)
Liver/Hepatic, Hepato-cellular (HCC)	Stage III Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "locally advanced", "not a surgical candidate", "ineligible/not a transplant candidate", ascites, other ( <i>specify</i> ___)
Colon/Rectum/Colo-rectal	Stage IV Dukes D	"metastatic", "mets to", spread to, recurrent "unresectable", "locally advanced", "not a surgical candidate", other ( <i>specify</i> ___)
Kidney/Renal Cell	Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "not a surgical candidate", other ( <i>specify</i> ___)
Ovarian	Stage III Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "not a surgical candidate", other ( <i>specify</i> ___)
Endometrial/Uterine	Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "not a surgical candidate", other ( <i>specify</i> ___)
Cervical	Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "not a surgical candidate", other ( <i>specify</i> ___)
Prostate	Stage IV	"metastatic", "mets to", spread to, recurrent, other ( <i>specify</i> ___)

<b>A</b>	<b>B</b>	<b>C</b>
Melanoma	Stage IV	"metastatic", "mets to", spread to, recurrent, other ( <i>specify</i> ___)
Brain	NA	Recurrent, relapsed, not a surgical candidate, mets to, refusing surgery/radiation, chemotherapy, other ( <i>specify</i> ___)
Lymphoma	Stage III Stage IV	Relapsed, not a chemo candidate, not a transplant candidate, relapsed after transplant, other ( <i>specify</i> ___)
Multiple myeloma	Stage III Stage IV	Not a transplant candidate, relapse after transplant, other ( <i>specify</i> ___)
Sarcoma	Stage IV	Not a transplant candidate, relapse after transplant, other ( <i>specify</i> ___)
Anal	Stage IV	"metastatic", "mets to", spread to, recurrent "unresectable", "locally advanced", "not a surgical candidate" , other ( <i>specify</i> ___)
Thyroid (eligible papillary, follicular, medullary and all anaplastic)	Stage IV	Unresectable, metastatic, mets to, refusing chemo/surgery, not a surgical candidate, other ( <i>specify</i> ___)
Vulva	Stage IV	Unresectable, metastatic, mets to, refusing chemo/surgery, not a surgical candidate, other ( <i>specify</i> ___)
Penis	Stage IV	Unresectable, metastatic, mets to, refusing chemo/surgery, not a surgical candidate, other ( <i>specify</i> ___)
Osteosarcoma	Stage IV	Unresectable, metastatic, mets to, refusing chemo/surgery, not a surgical candidate, other ( <i>specify</i> ___)
Sarcoma	Stage IV	Unresectable, metastatic, mets to, refusing chemo/surgery, not a surgical candidate, other ( <i>specify</i> ___)
Carcinoid	Stage IV	Unresectable, metastatic, mets to, refusing chemo/surgery, not a surgical candidate, other ( <i>specify</i> ___)
Other *Confirm eligibility with PI/MSSM	NA	"metastatic", "mets to", spread to, recurrent "unresectable", "locally advanced", "spread to regional lymph node," "not a surgical candidate" , not a chemo candidate, not a transplant candidate, not a radiation candidate, relapsed, other ( <i>specify</i> ___)

**eFigure1: CONSORT Flow Diagram**



\* Patients randomized to usual care were not restricted from receiving palliative care if their physician requested. They were included in the usual care study arm.

**eTable 2. Baseline Characteristics of the Study Participants**

<b>eTable 2. Baseline Characteristics of the Study Participants*</b>			
<b>Variable</b>	<b>Usual Care (N=67)</b>	<b>Intervention (N=69)</b>	<b>P-Value**</b>
Age – years	57.8 ± 14.7	55.1 ± 13.1	0.16
ECOG Score†	1.87 ± 1.18	1.78 ± 1.26	0.70
ECOG grade – no. (%)§			0.91
0	1 (16)	14 (20)	
1	14 (21)	16 (23)	
2	19 (28)	15 (22)	
3	19 (28)	19 (27)	
4	4 (6)	5 (7)	
Female – no. (%)	37 (55)	39 (57)	1.00
Race – no. (%)			0.80
White	20 (30)	23 (34)	
Black	15 (23)	18 (27)	
Asian	2 (3)	4 (6)	
American Indian or Alaskan Native	2 (3)	1 (1)	
More than one Race	2 (3)	1 (1)	
Other	25 (38)	20 (30)	
Hispanic or Latino – no. (%)	29 (43)	20 (29)	0.08
Marital status – no. (%)			0.28
Married	26 (39)	37 (54)	
Single	14 (21)	13 (19)	
Divorced or separated	17 (25)	14 (20)	
Widowed	10 (15)	5 (7)	
Education –no. (%)			0.49
High school or less	36 (54)	32 (46)	
College or more	31 (46)	37 (54)	

<b>eTable 2. (Continued.)</b>			
<b>Variable</b>	<b>Usual Care (N=67)</b>	<b>Intervention (N=69)</b>	<b>P-Value**</b>
<\$50,000	41 (61)	41 (62)	
≥\$50,000	15 (22)	19 (29)	
Don't know	11 (16)	6 (9)	
Born in US – no. (%)	37 (55)	35 (51)	0.61
Faith – no. (%)			0.75
Catholic	19 (29)	20 (29)	
Jewish	7 (11)	4 (6)	
Do not practice/believe	17 (26)	21 (31)	
Other	23 (35)	23 (34)	
Health Care Proxy – no. (%)			0.45
No	26 (39)	29 (42)	
Yes	34 (51)	37 (54)	
Don't know	7 (10)	3 (4)	
Living Will – no. (%)			0.48
No	51 (76)	47 (68)	
Yes	13 (19)	19 (28)	
Don't know	3 (5)	3 (4)	
Having insurance – no. (%)	65 (97)	67 (97)	1.00
Cancer Type – no. (%)			0.53
Breast	7 (10)	9 (13)	
Colorectal	7 (10)	9 (13)	
Lung	10 (15)	5 (7)	
Other	43 (64)	46 (67)	
Mood Outcome – no. /total no. (%)			0.12
Major Depressive Disorder†	19/65 (29)	24/69 (35)	
Quality of life – total no.#	N=67	N=68	

<b>eTable 2. (Continued.)</b>			
<b>Variable</b>	<b>Usual Care (N=67)</b>	<b>Intervention (N=69)</b>	<b>P-Value**</b>
FACT-G scores	59.82±16.77	53.56±19.61	0.06

\*Plus-minus values are means ±SD. Percentages may not total 100 because of rounding. ECOG denotes Eastern Cooperative Oncology Group, FACT-G Functional Assessment of Cancer Therapy – General Assessment. Variables are self-reported with the exception of Cancer Type, which was taken from the electronic medical record during the eligibility screening process.

\*\*P-values were calculated with the use of two-sided Fisher's exact tests for categorical variables and the Wilcoxon rank tests for continuous variables.

¶The ECOG scale, a measure of performance status, has a score that ranges from 0 to 4, with higher scores indicating a lower performance status.

§An ECOG performance status grade of 0 indicates that the participant is fully active, able to carry on all pre-disease performance without restriction; 1 that the participant is restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature; 2 that the participant is ambulatory and capable of all selfcare but unable to carry out and work activities along with up and about more than 50% of waking hours; 3 that the participant is capable of only limited selfcare along with confined to bed or chair more than 50% of waking hours; 4 that the participant is completely disabled, unable to carry on any selfcare along with totally confined to bed or chair.

‡The PHQ-9 is a nine-item measure that evaluates symptoms of major depressive disorder according to the criteria of the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV). Major depressive disorder was coded as a binary variable (Yes/No). A major depressive disorder was noted if a patient reported at least five of the nine symptoms of depression on the PHQ-9, with one of the five symptoms being depressed mood or a lack of pleasure. Symptoms had to be present for more than half the time over the past two weeks, except for the symptom of suicidal thoughts, which was included in the notation of major depressive disorder, if it was present at any time.

# The quality-of-life was assessed by the use of the measure FACT-G, on which scores range from 0-108, with higher scores indicating a better Quality-of-Life.

**eTable 3: Health Care Utilization: Hospice Use.**

Hospice Use among the Intervention and Usual care Group, at 180 days.

<b>Hospice Use</b>	<b>Intervention (N=69)</b>	<b>Usual Care (N=67)</b>
Yes, no. (%)	19 (28)	17 (25)
No, no. (%)	50 (72)	50 (75)

Chi-square, P-value = 0.93; Fisher's exact P-value = 0.85



**eTable 4: Health Care Utilization: Hospital Days.**

<b>Hospital Days</b>	<b>Intervention (N=69)</b>	<b>Usual Care (N=67)</b>	<b>Wilcoxon rank test P-value</b>
Hospital days during index admission, mean $\pm$ SD	7.00 $\pm$ 6.81	5.85 $\pm$ 4.74	0.67
Hospital days at 180 days from enrollment, mean $\pm$ SD	17.45 $\pm$ 20.18	10.93 $\pm$ 9.33	0.14

Hospital Days among the Intervention and Usual care Group, during the index-admission and at 180 days from enrollment.

## eTable 5: Health Care Utilization: Intensive Care Unit (ICU) Admission

Intensive Care Unit (ICU) Admission among the Intervention and Usual Care Groups, during the index-admission (5.A.), and at 180 days from enrollment (5.B.).

### 5.A. ICU Admission, during the index-admission.

<b>ICU Admission, index-admission</b>	<b>Intervention (N=69)</b>	<b>Usual Care (N=67)</b>
Yes, no. (%)	5 (7)	4 (6)
No, no. (%)	64 (93)	5 (7)

Fisher's exact test P-value = 1.00

### 5.B. ICU Admission, 180 days from enrollment.

<b>ICU Admission, 180 days</b>	<b>Intervention (N=69)</b>	<b>Usual Care (N=67)</b>
Yes, no. (%)	6 (9)	5 (7)
No, no. (%)	63 (91)	62 (93)

Fisher's exact test P-value =1.00