Burn Surgeon and Palliative Care Physician Attitudes Regarding Goals of Care Delineation for Burned Geriatric Patients

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Palliative care specialists (PCS) and burn surgeons (BS) were surveyed regarding: 1) importance of goals of care (GoC) conversations for burned seniors; 2) confidence in their own specialty's ability to conduct these conversations; and 3) confidence in the ability of the other specialty to do so. A 13-item survey was developed by the steering committee of a multicenter consortium dedicated to palliative care in the injured geriatric patient and beta-tested by BS and PCS unaffiliated with the consortium. The finalized instrument was electronically circulated to active physician members of the American Burn Association and American Academy for Hospice and Palliative Medicine. Forty-five BS (7.3%) and 244 PCS (5.7%) responded. Palliative physicians rated being more familiar with GoC, were more comfortable having a discussion with laypeople, were more likely to have reported high-quality training in performing conversations, believed more palliative specialists were needed in intensive care units, and had more interest in conducting conversations relative to BS. Both groups believed themselves to perform GoC discussions better than the other specialty perceived them to do so. BS favored leading team discussions, whereas palliative specialists preferred jointly led discussions. Both groups agreed that discussions should occur within 72 hours of admission. Both groups believe themselves to conduct GoC discussions for burned seniors better than the other specialty perceived them to do so, which led to disparate views on perceptions for the optimal leadership of these discussions. (J Burn Care Res 2018;39:1000–1005)

As the U.S. population continues to age, seniors are consuming increasingly larger amounts of intensive care unit (ICU) resources. Patients aged 65 years and older currently account for 42 to 52% of all ICU admissions and for almost 60% of all intensive care unit days.[1–4] Additionally, 40% of Medicare patients who die are admitted to intensive care during their terminal event, and these episodes account for a staggering 25% of all Medicare expenditures.[5,6] Meanwhile, although outcomes continue to improve for the burn population at large, this is not the case for geriatric burn patients who have experienced no change in mortality since the 1970's making this topic particularly relevant for this group of patients.[7] Considering that geriatric survivors of thermal injury frequently undergo prolonged and debilitating ICU admissions, multiple invasive procedures, and reductions in their independence and quality of life, this group benefits from early goal-setting conversations that align their treatment plan with their values, goals, and preferences.

Historically, these discussions have been led by burn surgeons (BS) given their expertise in thermal injury convalescence and sense of responsibility to their patients,[8] but this is at the potential cost of the use of a decision-making framework prevalent among BS[9] which is predicated on the assumption that the role of burn care is to intervene in order to restore normalcy.[10] The novelty of the paradigm in which palliative care physicians are involved in the creation of goals of care (GoC) for burned seniors means that little research has been done in this field. Among the unknowns are what the attitudes of both BS and palliative care specialists (PCS) are to this new construct, how comfortable both specialties are with involvement of palliative care in this arena which was previously dominated by burn surgery, and how much faith both specialties have in the other's ability to lead meaningful GoC discussions.

METHODS

To better understand the perceptions of burn and palliative physicians conducting GoC conversations with burned geriatric patients, we developed and administered an assessment

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survey. The survey contained 13 items assessing perceptions with 3 additional comment boxes to collect additional qualitative feedback followed by 12 other items assessing training and demographics.

Survey Design

We first conducted an extensive literature review to thoroughly understand the considerations associated with GoC and the elderly. This in turn helped drive initial item development, which was conducted by the steering committee of a multicenter consortium dedicated to palliative care in the injured geriatric patient. A content review was conducted with several subject matter experts, in which they reviewed the items for appropriateness, clarity, and content domain coverage. Items were modified based on this feedback. Items were then piloted with a larger group of subject matter expert physicians from both burn surgery and palliative care, and item characteristics and time for completion were examined to ensure high value data. The final version of the survey was deemed exempt by the Institutional Review Board and also approved by the Research Committees of the American Burn Association (ABA) and the American Academy for Hospice and Palliative Medicine (AAHPM) before electronic dissemination to each group's physician members.

Data Collection

Survey data were collected via an online survey software (SurveyMonkey.com LLC, Palo Alto, CA). Email invitations with embedded anonymous links were sent from both groups (ABA and AAHPM) to all physician members in the fall of 2017. One invitation was distributed with a follow-up invitation 1 week later. Participants with memberships in both organizations were asked to complete the survey for the group with which they felt they were most associated. Data collection was set to allow multiple responses per device—to prevent a second responder from not being able to complete the survey (or seeing the results of the prior).

Only one item was a required item, "I am familiar with the concept of setting goals of care (GOC) for patients." If a respondent endorsed no familiarity (i.e., a score of 0 on the Likert-type scale, 0 = *Strongly Disagree* to 6 = *Strongly Agree*), skip logic in the survey precluded later GOC opinion items from being shown.

Data Analysis

Data were initially extracted and reviewed in Excel, and analyzed in SPSS v.25. Item mean comparisons for Likert-type scale items were conducted with Mann–Whitney *U* tests, whereas items with categorical-level response options were examined with chi-square (χ^2) analyses.

RESULTS

Responses were received from 45 BS (7.3%) and 244 PCS (5.7%). On average, it took 5.8 minutes for respondents to complete the survey. Physician demographics and training information are presented in Table 1–3. PCS and BS physicians were similar in age (mean = 50 and 47 years, respectively). Both groups had a similar gender composition, and similar years of practice. The distribution of representation of work settings was different with BS practicing more frequently in academic safety net hospitals (BS with 51% vs 21.4% of PCS) while PCS practiced more frequently in urban community hospitals (BS with 8.9% and PCS with 27.6%). Regarding training, PCS were more likely to have received GOC training relative to BS in fellowship and also on-the-job.

Only one individual (PCS) indicated no familiarity whatsoever (a score of 0 on the familiarity question) with the concept of setting GoC. PCS rated being slightly more familiar with the GoC concept relative to BS. Both specialties equally agreed regarding the importance of GOC discussions for injured geriatric patients (IGPs) (mean of 5.93 for both). PCS were more likely to report have received high-quality training in performing GoC conversations relative to BS. Moreover, PCS believed more PCS were needed in ICUs relative to BS.

Interestingly, both sets of physicians believed themselves to perform GoC discussions better than the other specialty

Table 1. Demographic Comparisons for PCS and BS

	PCS		*BS*			
	μ	***σ***	***μ***	***σ***	**Mann-Whitney U**	***p* value**
What is your age?	50.03	11.54	46.84	11.67	3615.50	.10
Gender (0 = *male*, 1 = *female*):	0.55	0.50	0.49	0.51	5181.50	.49
Fellowship Trained in Palliative/Burn (0=*no*, 1 = *yes*)	0.47	0.50	0.53	0.50		
How many years have you been in practice in palliative care/burn surgery?	10.74	8.20	12.72	10.64	4979.50	.44
What percentage of your time is dedicated to clinical care in palliative care? (0=*none*, 100 = *All of my time*)	69.48	30.90	69.93	30.20	5321.00	.96
How frequently do you deliver clinical care to IGPs*? (0 = *never*, 100 = *frequently*)	49.05	32.71	68.79	29.77	34967.00	<.001

PSC = palliative care specialists; BS = burn surgeon; IGP = injured geriatric patient; GoC = goals of care

Table 2. Practice Setting Comparisons Between PCS and BS

	PCS % Endorsed	BS % Endorsed	$\chi 2$	*p* value
How would you describe the setting where you spend the majority of your time?			23.196	<.001
a) Academic private center	20.60%	26.70%	.834	.361
b) Academic safety net hospital	21.40%	51.10%	17.403	<.001
c) Rural community hospital	9.50%	2.20%	2.607	.106
d) Urban community hospital	27.60%	8.90%	7.135	.008
e) Other	21.00%	11.10%	2.365	.124

PCS = palliative care specialists; BS = burn surgeon

perceived them to do so. Both specialties also more strongly believed that physicians in their respective fields received higher quality training relative to the other specialty, and that specialists in their respective fields also were more interested in conducting GOCs. Table 4 contains additional data and comparisons of PSC and BS attitudes.

Regarding perceptions of the best model for conducting GoC discussions, both physician sets favored their own specialty leading team GoC meetings. Both agreed that GoC discussions should occur within 72 hours of admission, with most favoring the 24- to 72-hour time period (Table 5 and 6). Finally, there were 127 (12 from BS) open-ended comments in total. Representative examples were selected and are presented in Table 7.

DISCUSSION

The attitudes of BS and PCS regarding GoC conversations with thermally injured seniors and their surrogates are largely unknown. In the current study, while both BS and PCS agreed on the importance of GoC discussions, each group deemed themselves more skilled than the other group perceived them to be. Both BS and PC physicians believe their specialty should lead GoC conversations.

In recent years, the involvement of palliative care in the ICU has become more common place with benefits in quality of communication, symptom control,[11] and mortality.[12] Despite these recognized advantages, the dynamics of a nonsurgically trained team assisting in the delineation of GoC after burn injury in the elderly can be complicated and may manifest as obstacles to routine incorporation of PCS into patient care. The present study is novel with regard to defining the attitudes of each involved specialty with the goal of facilitating the transition to a multidisciplinary practice pattern.

A 2009 study conducted interviews with nine trauma-BS and neurosurgeons at a single center to delineate surgeon attitudes towards consulting palliative care in their practice.[13] At this institution, surgeons tended to consult palliative care when a patient's prognosis was poor, care by the surgeon became futile, or a condition involved end-of-life issues. In cases of unknown prognosis, surgeons often relied upon the patient's family response to end-of-life discussions to guide the decision to involve PCS. The surgeon-respondents reported a concern that the family would misinterpret the consult as a sign of giving up on the patient. This study demonstrated that surgeons generally recognize the potential benefits of PCS involvement, and the current study highlights the attitudes in BS with specific regard to severely burned geriatric patients. A recent survey of Gynecologic Oncologists also found similar concerns regarding patient perceptions of palliative involvement.[14] Beliefs and perspectives of PCS were not discussed in either of these studies.

In our study, BS reported providing care to burned seniors more frequently than PSC; however, they were less comfortable holding GoC discussions alone and did not feel as though they had received high-quality training in the field relative to PCS. In our study and those mentioned above, the surgical specialist believes themselves more appropriate to lead GoC discussions despite the BS acknowledgement of a lack of formal training. The concern for patient or family perception of abandonment of care or hope has been described in previous studies and likely contributes to the

Table 3. Group Differences in GoC Training

	PCS		BS			
Please indicate how much training in setting GoC for IGP*s you have received from the sources below:(0-6, 0 = *none at all*, 3 = *some training*, 6 = *extensive training/completely prepared me*)**	μ	σ	μ	σ	Mann-Whitney U	*p* value
Medical school	2.10	1.38	2.52	1.61	4545.00	.10
Residency	2.79	1.63	3.27	1.61	4079.00	.08
Fellowship	4.62	1.95	3.62	1.97	2111.50	.00
On-the-job Mentoring/Training	5.37	1.24	4.95	1.25	3236.50	.00

GoC = goals of care; IGP = injured geriatric patients

Table 4. Descriptive Data and Comparisons of GoC Attitudes for PCS and BS.

	PCS		BS			
Please indicate your level of agreement with the following items in regard to specifically conducting goals of care (GOC) with injured geriatric (age 65 or older) patients (IGPs) and/or their surrogates. (1-7, 1 = *Strongly Disagree* to 7 = *Strongly Agree*)	***μ***	***σ***	***μ***	***σ***	**Mann-Whitney U**	***p* value**
I am familiar with the concept of setting goals of care (GOC) for patients.	5.91	0.65	5.82	0.68	5123.00	.02
I consider GOC discussions important for IGPs.	5.93	0.50	5.93	0.33	5319	.60
I would be comfortable performing a GOC conversation for an IGP by myself.	5.89	0.60	5.64	0.80	4579	<.001
I believe that the average physician in burn surgery performs GOC discussions well for IGPs.	3.23	1.32	4.53	1.31	2261.5	<.001
I believe that the average physician in palliative care performs GOC discussions well for IGPs.	5.83	0.62	4.98	1.35	3044.5	<.001
I believe there should be an increased presence of palliative care physicians in the Surgical/Burn ICU to work with IGPs.	5.73	0.66	4.76	1.71	3643.5	<.001
I have received high quality training in how to perform GOC discussions for IGPs.	5.40	1.05	4.09	1.49	2542.5	<.001
I believe that burn surgeons in general receive high quality training in how to perform GOC discussions for IGPs.	2.47	1.23	3.36	1.43	3171.5	<.001
I believe that palliative care physicians in general receive high quality training in how to perform GOC discussions for IGPs.	5.59	0.85	4.93	1.32	3522.5	<.001
I believe that in general burn surgeons are interested in conducting GOC discussions for IGPs.	3.88	1.42	4.96	1.36	2750.5	<.001
I believe that in general palliative care physicians are interested in conducting GOC discussions for IGPs.	5.88	0.54	5.48	0.98	4078.5	<.001

GoC = goals of care; PCS = palliative care specialists; BS = burn surgeons; IGP = injured geriatric patients

BS attitudes on our survey as well. The concept of a multidisciplinary team when dealing with these issues would ideally help mitigate this fear among BS and aid in a fuller understanding of PC by the patient and their family.

Suwanabol et al performed a systematic review of the literature to explain surgeon underuse of palliative care services in 2017 and among the major themes explored were surgeons' experience, knowledge, and attitudes.[15] The authors noted

Table 5. Attitudes Regarding Preferred Model of GoC Discussions

	PCS % Endorsed	BS % Endorsed	$\chi 2$	*p* value
Which of the following models do you think describes the best model for conducting GOC discussions with geriatric patients and/or their surrogates after admission for burn injury?			37.13	<.001
a) Palliative care physicians should conduct the meetings by themselves	0.80%	0.00%	.378	.539
b) Palliative care physicians should lead the meeting with burn surgeons present	37.90%	11.10%	12.189	<.001
c) Attending burn surgeons should lead the meeting with palliative care physicians present	35.80%	62.20%	10.995	.001
d) Burn surgeons should conduct the meeting by themselves	2.50%	17.80%	18.936	<.001
e) No opinion	4.60%	0.00%	2.145	.143
f) Other	18.30%	8.90%	2.413	.120

PCS = palliative care specialists; GoC = goals of care

Table 6. Attitudes Regarding Preferred GoC Discussion Timing

	PCS % Endorsed	BS % Endorsed	$\chi 2$	*p* value
When do you feel is the best time point to have the FIRST GoC discussion?			2.154	.541
a) within 24 hours after admission,	39.20%	37.80%	.031	.861
b) between 24 and 72 hours after admission,	44.20%	44.40%	.001	.973
c) between 72 hours and 7 days after admission,	4.20%	8.90%	1.809	.179
d) between 7 and 14 days after admission,	0.00%	0.00%	n/a	n/a
e) Greater than 14 days after admission	0.00%	0.00%	n/a	n/a
f) Other	12.50%	8.90%	.470	.493

GoC = goals of care; PCS = palliative care specialist; BS = burn surgeon

that surgeon training in palliative care was based on informal, on-the-job experience and that increased surgeon age was positively correlated with acceptance of palliative care. Interestingly, increased surgeon experience was associated with a decreased interest in aggressive interventions in one study.[16] In many studies reviewed, a large percentage of surgeons reported no training at all in palliative care.[17–21] In general, surgeons' attitudes toward palliative care were very supportive; however, when looking specifically at neurosurgeon, acute care surgeon, and BS attitudes, the data was mixed.[15]

Our study focused efforts in the burn surgery cohort due to an anecdotal belief that BS are generally less interested in the involvement of palliative care services in the ICU phase of burn patients' care. While admittedly subjective, the senior BS in the current group of investigators (HAP and SLW) have been left with this impression based on years of discussing this topic with BS colleagues at the national level. Given the old truism that "the plural of anecdote is not data," our group undertook the present study to investigate its premises. BS did report interest, albeit less than that of PCS, in having these discussions, and one surgeon wrote that he or she believes that the ABA should "incorporate this service into routine care." Of note, BS did rate the perceived interest of PCS in GoC discussions with burned seniors as higher than their own perceived interest in the topic. This may support the idea that BS are open to inclusion of palliative care in these issues.

The palliative care physicians believe that their specialty is more interested and better equipped than burn surgery is to conduct these meetings. At the same time, the burn respondents agree with both statements. As noted in the above studies, a major concern for the primary team is often that a PCS consult will translate to "giving up," to the patient or their family. In the current burn ICU culture, where GoC discussions are often inspired by injury severity alone and patient perceptions of GoC conversations are based on communication failures,[22] this concern will likely continue to thrive for both patients and physicians. Perhaps, earlier and more routine inclusion of PCS would facilitate better communication, fewer feelings of hopelessness, and a better overall experience for the patient, their family, and possibly the surgeon.

Our intention was to define the interest and comfort of each of these specialties in a multidisciplinary approach to

Table 7. Example Optional Comments Provided by PCS and BS

	PCS	BS
General GoC opinions	Most surgeons do it too little and too late without any standardized practice.	This should become part of ABA verification process to incorporate this service into routine care.
Best Model of GoC	Who should "conduct" the meeting depends upon the skills, cultural competence, and trust of patient and family - all should have the skills, but it may be that a Moslem social worker has the alliance with the family, or a Catholic nurse. The team needs to be flexible and adapt to the situation.	This is a shared responsibility. Palliative care physicians provide better perspective of pre-morbid state and have time for more granular discussions. Burn MDs provide the clinical data to trigger more aggressive discussions of impending death.
Best time to have GoC discussion	At any time that GoC decisions need to be made, an urgent GoC conversation can be conducted. More planned GoC can be conducted when majority of important decision makers can reasonably be present, but generally at 24-72h.	This is very difficult to answer. All patients and situations are different. Family dynamics also make a big difference. I would say generally within 24-72 hours, with more significant injury requiring a sooner than later approach.
Training for GoC	I taught myself how to do this and then sought to learn much better skills through Ariadne Labs' Serious Illness Project and through Vital Talk training	I have personally pursued this training, this was not part of my standard orientation or training process.

GoC = goals of care; PCS = palliative care specialists; BS = burn surgeons; ABA = American Burn Association

GoC in geriatric burn patients. Interestingly, our survey indicated that PCS in general feel comfortable holding meetings despite not being experts in the field of Burn Surgery. Overall, we would not advocate for a uniform, one-size-fits-all guideline on who should conduct these meetings. Instead, we would encourage a collaborative effort by both teams to discuss the individual patient's clinical situation and individualize the specifics of the conversation including the designated leader to each patient and family circumstance. Ideally, a great deal of communication between specialist teams would occur prior to the GoC family meeting in order to ensure a united message is conveyed and that all partied involved have the same understanding of patient prognosis. Important to recognize are the limited resources of some hospitals and burn centers with regard to PCS. In these cases, developing a close working relationship with any palliative care trained professionals may help improve a surgeon's communication abilities. There are also many other options for physicians to learn more about this topic, a couple of which are discussed below.

The endeavor to improve surgeon ability to conduct GoC conversations is ongoing. While the addition and inclusion of PCS in these discussions may offer unique benefits for patients and their families' experiences, these physicians and their time are limited commodities. For this reason, additional strategies must be developed, particularly in the surgeon cohort. The Ariadne Lab has developed a six-part Serious Illness Program which is available online and provides a conversation guide for all clinician types.[23] Vital Talk is another platform for physicians which offers online courses as well as in-person workshops on improving communication skills.[24] Interestingly, there is a multi-institutional interventional study currently being conducted which will seek to employ a specific framework for GoC discussions in the trauma ICU. Pending the results of this study, utilization of this tool may provide potential for improvement in the burn ICU.

We recognize the limitations of generalizability of a study with response rates of 7% for BS and 5% for PCS providers. These proportions are however within range of expected values given our design—a one shot email distribution campaign with no incentive nor follow-up and no ability to correct based on whether or not the email was even viewed.[25–27] It should be stressed that this study is intended to lay the groundwork for improving palliative care delivery in the geriatric burn population. Gaining an understanding of the attitudes of both BS and PCS will inform the development of optimal team compositions in the burn unit for these important conversations. Moving forward, additional studies with qualitative and quantitative methods should be conducted to further characterize the themes deemed important by each specialty and the themes which emerge during conversations led by each specialty.

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