◉加温・冷却

加温はホットパックや蒸しタオル，入浴などであたためることによって症状を緩和する方法である。加温の作用は皮膚の血行改善，血管拡張，組織の酸素および栄養供給を促進させることと考えられているが，疼痛緩和における効果はいまだ明らかにはなっていない。個々の患者で効果があるようならばケアとして取り入れていく。加温では，皮膚病変や出血，炎症がある場合や貼付剤を貼っている部位は避ける。感覚の低下した人では低温やけどに十分注意する必要がある。

冷却は，コールドパックや氷枕などで冷やすことにより疼痛を緩和する方法である。冷却の作用は，血管を収縮させることで透過性を変化させ，代謝，酸素消費，腫脹，発痛物質や乳酸を減少させること，炎症に対しては酵素活動の破壊によって効果をもたらすものと考えられているが，疼痛に対する効果は明らかではなく，熱感がある場合など，好みに応じて使用する。感覚低下や循環障害がある場合には使用に注意を要する。

◉気分転換法

気分転換法は，聴覚や視覚，触覚など，疼痛以外のことに意識を集中させることにより，痛みの感覚から自己を遮断させる感覚遮断の1つの方法である。刺激がないと，自然と意識が身体のことに集中してしまうため，意図的に痛みから意識をそらすケアが有効とされている。気分転換法には音楽，ユーモアのある会話，家族と過ごす，散歩，気に入ったテレビやビデオを観るなどが含まれる。これらのケアは簡便な日常的なケアとしても実施可能であり，痛みの閾値を上げる因子にもつながるケアである。

◉患者教育

前述のように痛みやオピオイドに対する誤解は，疼痛緩和の大きな障壁になる。痛みを我慢することの弊害やオピオイドに関する正しい情報を提供し，個々の患者の誤解を修正する必要がある。適切な患者教育を行うことで，疼痛そのものが改善され，疼痛緩和を促進する効果がある。

ただし，正しい情報を提供してもなお抵抗感が強い場合には，無理じいはせず，納得できるまで見まもることも必要である。

◉心理・社会的・スピリチュアルな側面でのケア

痛みは全人的苦痛として表現されるため，がん患者に限らず，心の問題が大きく影響する。とくに疼痛緩和がうまくいかない患者においては，患者が気がかりや悩みごとをかかえていないか，不安や恐怖感，抑うつがないか，アセスメントを重点的に行う。ADLの低下した患者や死に直面している患者では，なにもできない自分に対して「迷惑ばかりかけて申し訳ない」といった自己価値の低下や生きる意味の喪失などがスピリチュアルペインとして表出される。患者の思いを受けとめ，気持ちに寄り添っていくことが大切である。

また，オピオイドに抵抗感が強い患者に対しては，単に情報提供ばかりを行

うのではなく，その背後にある病気や痛みに対する思いに耳を傾けることが重要である。病気の受けとめ方，痛みの持つ意味に目を向けて傾聴することが求められる。

2 吐きけ・嘔吐に対する援助

● 吐きけ・嘔吐に対する治療

吐きけ・嘔吐の原因に応じた治療，原因にあった薬剤を使用するのが原則である。

末梢性の吐きけ・嘔吐では末梢性の制吐剤，CTZ への刺激に対しては中枢性の制吐剤，前庭刺激に対しては乗り物酔いと同様に抗ヒスタミン剤が用いられる。脳圧亢進症状に対してはステロイドがまず使用される。制吐剤の定期的な使用にもかかわらず改善がない場合には，ほかの原因を検討する。

原因が薬剤の場合には，可能であればその薬剤を中止することも検討される。腸閉塞の場合には，経鼻胃管やイレウス管を挿入し，消化液を排出させる方法を取ることがある。終末期の患者では，QOL を重視し，患者の希望に応じて管を入れずに様子をみることもある。便秘が原因となっている場合には，下剤や摘便，浣腸を用いて排便コントロールをしっかりと行う必要がある。不安が強い場合には，抗不安薬を使用すると有効な場合も多い。

また，吐きけ・嘔吐が強い場合には脱水にならないよう補液を行う場合が多いが，過剰な輸液は浮腫や胸水・腹水などを助長させる場合もあり注意して観察する。

● 吐きけ・嘔吐に対するケア

◉ 食事の工夫

食事の工夫として，希望に応じて食べ物を冷まして提供する，さっぱりしたもの，水気の多いものを工夫する。終末期患者では，QOL を重視して経鼻胃管を入れながら流動食を摂取したり，飲み込まずに咀嚼だけで食べ物を味わってもらう場合もある。患者の希望に応じて，腸閉塞でも経鼻胃管を入れないこともある。

◉ 環境調整

においや室温，光など環境によって吐きけ・嘔吐が誘発・悪化することがあり，室内の換気や温度，採光の調整を行う。嘔吐時には吐物をすみやかに処理し，冷水でうがいをする。

腹部を圧迫しない体位や締めつけのない衣服を工夫し，リラックスできる環境をつくる。

◉ 心理面・社会面・スピリチュアルな面

不安や苦悩は吐きけにも多大な影響を及ぼす。病気に対する不安や死に対す

る恐怖，さまざまな苦悩が吐きけの要因となることも少なくない。化学療法など治療に伴う吐きけ・嘔吐では，一度吐きけ・嘔吐を体験すると次回は投与前から吐きけ・嘔吐が出現する予期嘔吐を生じることもある。吐きけ・嘔吐があるときには背中をさすりながら寄り添い，安心できる対応に努め，全人的苦痛の観点からアプローチしていくことが大切である。

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(財)日本ホスピス・緩和ケア研究振興
ホスピス緩和ケア白書」編

Ⅵ. がん対策基本法後に緩和ケアチームはどう変わったか
—緩和ケアチーム研修会からみえる課題—

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はじめに

2007年4月にがん対策基本法が施行され，まもなく4年になる。がん患者の療養生活の質の維持と向上を目的として，緩和ケアを推進していくことが法律で定められた意義は大きく，2009年10月からは，すべてのがん診療連携拠点病院（以下，拠点病院）の緩和ケアチームには，専従看護師と専任医師を配置することが指定要件になっている。しかも緩和ケアチーム専従看護師は緩和ケアの専門性を有し，専任医師は緩和ケアに習熟していなければならない。がん診療に携わる医師に対する緩和ケア研修会は，緩和ケアチームが中心になって開催することが多いが，これは第1次緩和ケアの普及が目的であって，緩和ケアチームの本来の役割である専門的緩和ケアの提供にはならない。

2007年度より国立がん研究センターがん対策情報センター研修企画課（以下，国立がん研究センター）が，全国の拠点病院の緩和ケアチームを対象にして研修会を開催してきた。本研修会は，全国の緩和ケアチームが適切な緩和ケアを提供することを目標としてきた。本稿では，この4年間実施した緩和ケアチーム研修会からみえる課題を考えてみたい。

がん診療連携拠点病院緩和ケアチーム研修会

2005年に策定された第3次対がん10カ年総合戦略に基づき，がん医療の均てん化を目指して，拠点病院が指定されており，その指定要件として，一般病棟での緩和ケアの提供体制の整備が含まれている。2006年2月に拠点病院の整備に関する指針により，緩和ケアチームの設置が求められ，2007年4月にがん対策基本法が施行，2009年10月からは拠点病院の緩和ケアチームには専従看護師と専任医師が配置されることになった(表1)。

緩和ケアチームは専門的緩和ケアを提供すべき役割を担っているが，具体的な活動指針については，日本緩和医療学会の緩和ケアチームの手引き[1]があるものの，緩和ケアチームがどのように活動してよいのか分からないという施設も多数存在している。2007年度から国立がん研究センターと「がん医療の均てん化に資する緩和医療に携わる医療従事者の育成に関する研究班（以下，当研究班）」が共催し，緩和ケアチーム研修会を開催している[2,3]。研修会の目標は，全国の拠点病院の緩和ケアチームの質の向上と均てん化を図り，緩和ケアの提供体制を整備することである。

1 研修会プログラム (表2)

2007年度は1日間のプログラムであったが，2008年度から2日間とした。2009年度からは，基礎コースと中級コースに分けて講習会を行った。2010年度プログラムは，基礎研修会，中級研修会の2つである。基礎研修会の対象は，緩和ケアチームを立ち上げて間もない施設，中級研修会の対象は，年間依頼件数が100件以上の施設とした。

基礎研修会の学習目標は，自施設の問題点に気

表1　緩和ケアチームの変遷

1992年	わが国初の緩和ケアチーム活動開始
2002年4月	緩和ケア診療加算
2005年4月	第3次対がん10カ年総合戦略
2006年2月	拠点病院に緩和ケアチームを設置
2006年6月	がん対策基本法施行
2008年4月	緩和ケア診療加算届出施設80カ所（拠点病院54カ所）
2009年10月	すべてのがん診療連携拠点病院の緩和ケアチームに専従看護師，専任医師を配置
2010年4月	緩和ケア診療加算届出施設122カ所（拠点病院90カ所）

表2　2010年度 拠点病院 緩和ケアチーム研修会プログラム

第1日目	
13：00–13：15	Ⅰ．Key Note Speech（研修目的・概要説明）
13：15–13：45	Ⅱ．アイスブレーキング
13：45–15：35	Ⅲ．自分たちのチーム活動を見直してみよう（グループワーク）
15：35–15：45	休憩
15：45–16：35	Ⅳ．講義　①コンサルテーションとは ②疼痛のメカニズム
16：35–17：50	Ⅴ．職種別に抱える困難について解決策を見出そう （職種別分科会・グループワーク）
17：50–18：00	まとめ
第2日目	
09：00–10：00	Ⅵ．倫理的ジレンマについて（講義）
10：00–10：10	休憩
10：10–12：10	Ⅶ．コンサルテーションへの対応（グループワーク）
12：10–13：10	休憩（昼食）
13：10–13：50	Ⅷ．緩和ケアチームの活動紹介（プレゼンテーション）
13：50–14：00	休憩
14：00–15：45	Ⅸ．緩和ケアチーム　明日への課題（グループワーク）
15：45–16：00	修了式

づくこと，コンサルテーションの基本を学ぶこと，自施設のチームの問題点に対して具体的な解決方法を立案することとした。中級コースは，活動によって生じる問題点，特に症状緩和や倫理的ジレンマについての講義が加わった。

2 研修会の満足度（図1）

2007年度58施設，2008年度61施設，2009年度63施設，2010年度51施設（予定）の身体症状担当医師，精神科医，看護師，薬剤師，臨床心理士（2007年度のみ）延べ931名が受講した。研修会の受講者には，研修会の満足度評価アンケートと研修会前，直後，3カ月後，6カ月後，12カ月後の活動評価アンケート調査を実施している。

研修会に対する満足度調査は，毎年高い評価を得ている。特に，講義形式よりもグループワークやロールプレイの満足度が高い傾向がみられた。参加者による自由回答からは，職種別の分科会の評価が高い。特に，印象的なのはグループワークで，チームメンバー間で十分に話し合う時間が持てたという感想である。普段の活動で話し合う時間を確保できていないチームが存在していることを裏づけている。

研修会後の活動評価アンケートでは，チーム活動の変化を経時的に追っている。

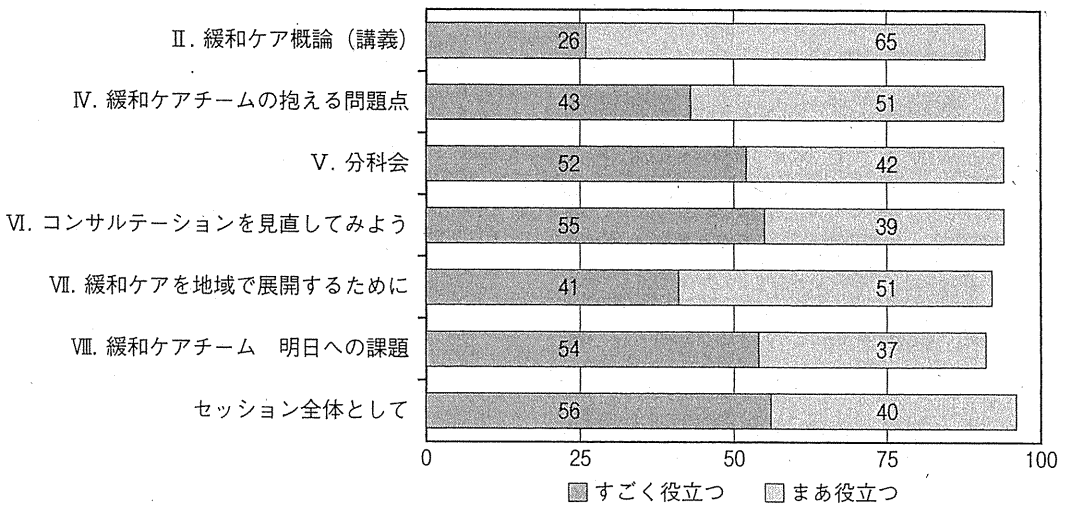

図１　2008年度　拠点病院 緩和ケアチーム研修会　各セッション評価（参加者全体）
すごく役立つ・まあ役立つと回答した割合（%）

3 参加者の背景と問題点（表3）

2007年度からの4年間で，研修会に参加者の背景に変化がみられている。2007年度開始当初は，緩和ケアチームの活動が活発な施設が参加していたが，2008年度からは，活動開始間もない施設が参加するようになった[4]。これは，がん対策基本法の施行や拠点病院の要件に緩和ケアチームの設置が求められたために，急遽，緩和ケアチームをつくった施設が増えたためと思われた。2009年10月から緩和ケアチームに専従看護師と専任医師を配置しなければならず，緩和ケアチームは整備されつつあるようにみられているが，2010年の参加施設の中には，専従看護師や専任医師の配置が遅れている施設もみられていた。

第1の問題点として，チーム活動時間の確保が十分でないことである。基礎研修会の参加施設の中には，スタッフ全員が兼任であることも珍しくなかった。立ち上げたばかりのチームにはグループワークで議論がかみ合わなかったり，活動上直面する問題点がまったく挙がらなかったり，コンサルテーションを理解していない参加者もみられた。

これは，週1回の回診を緩和ケアチームの活動としている施設には無理からぬ話である。しかし，これはチームのメンバーに責任があるのではなく，病院の体制に問題がある。緩和ケアの活動時間は，時間外やボランティアで行うべきものではない。病院として緩和ケアチームの活動を担保しなければ，活動できるはずがない。

表3　問題点

1．活動時間の確保
2．精神科医の不足
3．専従看護師，専任医師の専門性教育，臨床実習の機会が少ない

第2の問題点は，精神科医の不足である。すべての拠点病院の緩和ケアチームに精神科医の配置を求めているが，現状では不可能であろう。がんセンターや大学病院以外に精神科医が専従もしくは専任で緩和ケアチームの活動している施設はごく少数であり，精神科医が非常勤であるために，本研修会に参加できないことや，活動していても緩和ケア診療加算が算定できないと指摘されていた。

第3に，緩和ケア専従・専任スタッフの臨床経験や教育の機会が十分でないことである。2009年10月から看護師は専従，医師は専任でなければならない。専従看護師には緩和ケアに専門の知識が必要であるし，専任医師は緩和ケアに習熟していなければならない。しかし，緩和ケアチームとしての教育を受けている医療者は少ない。専門的な知識と技術を取得する機会や緩和ケアチームを支援する体制は，国立がん研究センターだけでなく，日本緩和医療学会にも必要なのではないだろうか。

4 今後の課題—緩和ケアチームの質を向上させることができるのか（表4）

本研修会では，緩和ケアチームとしての課題を考えることやコンサルテーションの基本を学ぶことを学習目標としているため，難治性の疼痛や難しい症状緩和の技術，倫理的ジレンマなどを解決する能力が向上するわけではない。したがって，まずこれらの知識，技術を身につけるために，講義を含めた臨床実習が必要だと思われる。緩和ケアチームとしては，少なくとも1カ月程度が必要なのではないだろうか。これらは，第3次緩和ケアを請け負う専門教育研究機関が行うことであって，これらを受け入れられる施設は，国立がん研究センター以外には数施設しか存在しない。各都道府県に日本緩和医療学会認定施設があるが，緩和ケアチームの臨床研修を受け入れられる施設とは限らない。

本研修会は，国立がん研究センター主催のため，拠点病院が対象であった．しかし，2009年度からは，がん医療の均てん化を考え，拠点病院以外の参加を認め，数施設が受講した。また，日本対がん協会と筆者の所属する市立秋田総合病院との共催により2009年2月，2009年11月に秋田市で緩和ケアチーム研修会を2回開催し，拠点病院以外の施設も含めて21施設が参加した。

2010年度は，各都道府県拠点病院が緩和ケアチーム研修会を開催する動きがみられた。2010年3月に宮崎県，2010年9月に兵庫県が県主催の緩和ケアチーム研修会が開催された。各研修会ともに緩和ケアチーム同士の議論と交流の場になり，地域での活動に広がりをみせている。また，名古屋地区では，社会保険中京病院を中心に有志の緩和ケアチームが集まり，定期的に勉強会を開催している。今後は各都道府県で核になる施設が中心になって，緩和ケアチーム同士が連携し，質の向上を図る必要がある。

おわりに

がん対策基本法により，がん医療の均てん化と質の向上を図ることが求められ，特に緩和ケアの充実については，緊急の課題とされている．しかし，質の高い緩和ケアを自信を持って提供できている施設はまだまだ少ないのではないだろうか．質の高い緩和ケアを受けた患者・家族は，また緩和ケアを受けたいと思うかもしれないが，質が高くない緩和ケアを受けた患者・家族，依頼をした主治医や病棟スタッフがどのような思いを持つか答えは明白である．緩和ケアチームが入院しているすべてのがん患者の緩和ケアすべてを担うわけではないが，緩和ケアチームが主治医や病棟スタッフと有機的に連携しなければ，緩和ケアが充実したものにはならない．

がん医療の質の向上には，緩和ケアの充実が必

表4　緩和ケアチーム研修会の今後の課題

1．緩和ケアチームの質の向上が図れるか
　→緩和ケアチームでの臨床実習が必要
　→受け入れ施設は？
2．研修会の開催
　→国立がん研究センター主催
　→各都道府県での開催
3．緩和ケアチームの支援
　→フォローアップ研修会の開催
　→日本緩和医療学会からの支援

表5　研修会の関係者・協力者（敬称略，順不同）

木澤　義之	小室龍太郎	馬場　玲子
林　昇甫	岸澤　進	高山　良子
佐藤　哲観	井出　貴之	笹原　朋代
里見絵理子	吉澤　一巳	梅田　恵
佐野　智美	北折健次郎	伊勢　雄也
高橋　通規	岡村　仁	片岡　智美
坂下　美彦	内冨　庸介	宮澤　真帆
北條美能留	清水　研	龍　恵美
野﨑　善成	加藤　雅志	市田　泰彦
大坂　巌	大磯義一郎	小宮　幸子
泉　薫	田村　恵子	塩川　満
冨安　志郎	山口　聖子	久原　幸
多田羅竜平	藤本　亘史	岡崎　賀美
秋月　伸哉	井村　千鶴	大下　智子
小川　朝生	津金沢理恵子	岩満　優美
大西　秀樹	林　ゑり子	南　佳織
奥山　徹	山下めぐみ	稲田美和子
木下　寛也	竹之内紗弥香	大下　智子
小早川　誠	村上真由美	松向寺真彩子
所　昭宏	石川　千夏	中澤葉宇子
四宮　敏章	高見　陽子	橋爪　隆弘

要であることはがん医療に携わるすべての者が承知しているはずである．緩和ケアチーム研修会を開催して分かることは，研修会に出席する多くのメンバーにはとても熱意がある。しかし，チーム以外の仕事が忙しく，手が回らない状況に陥っている．医師不足や看護師不足の中で，緩和ケアチームの活動を行うことすら困難な状況にある．また，薬剤師が病棟でのチーム活動に割く時間が確保できない施設，精神科医が撤退してしまった施設なども存在している．日本緩和医療学会や国立がん研究センターで，緩和ケアチームを支援する体制が必要だと考えている．

最後に，緩和ケアチーム研修会を主催している国立がん研究センターの関係者，当研究班員および研修会協力者の皆様（表5）と研修会を受講した全国の緩和ケアチームの皆様にこの場を借りて御礼申し上げたい．

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Development of a nationwide consensus syllabus of palliative medicine for undergraduate medical education in Japan: a modified Delphi method

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Development of a nationwide consensus syllabus of palliative medicine for undergraduate medical education in Japan: a modified Delphi method

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Abstract

Background: There is currently no consensus syllabus of palliative medicine for undergraduate medical education in Japan, although the Cancer Control Act proposed in 2007 covers the dissemination of palliative care.

Aim: To develop a nationwide consensus syllabus of palliative medicine for undergraduate medical education in Japan using a modified Delphi method.

Design: We adopted the following three-step method: (1) a workshop to produce the draft syllabus; (2) a survey-based provisional syllabus; (3) Delphi rounds and a panel meeting (modified Delphi method) to produce the working syllabus. Educators in charge of palliative medicine from 63% of the medical schools in Japan collaborated to develop a survey-based provisional syllabus before the Delphi rounds. A panel of 32 people was then formed for the modified Delphi rounds comprising 28 educators and experts in palliative medicine, one cancer survivor, one bereaved family member, and two medical students.

Results: The final consensus syllabus consists of 115 learning objectives across seven sections as follows: basic principles; disease process and comprehensive assessment; symptom management; psychosocial care; cultural, religious, and spiritual issues; ethical issues; and legal frameworks. Learning objectives were categorized as essential or desirable (essential: 66; desirable: 49).

Conclusions: A consensus syllabus of palliative medicine for undergraduate medical education was developed using a clear and innovative methodology. The final consensus syllabus will be made available for further dissemination of palliative care education throughout the country.

Keywords

Delphi method, education, palliative medicine, syllabus, undergraduate

Introduction

Education is crucial for the useful dissemination of palliative care in society, which was denoted as one of the most important tasks by the Cancer Control Act proposed in 2007 in Japan. Despite this, palliative care needs to be more widely applied in Japan.[1] Insufficient access to education about palliative medicine is one of the reasons underlying this slow systemic application of basic measures,[2] despite publication of a syllabus of palliative medicine for postgraduate training by Hospice Palliative Care Japan in 2001[3] and by the Japanese Society for Palliative Medicine in 2004.[4]

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Japanese undergraduate education in this area has relied partially on the medical education model core curriculum (2007 revised edition)[5] and criteria of the national qualifying examination for physicians established in 2008.[6] However, these documents were abstract and restrictive, and not well reviewed by experts in palliative medicine. Some Western countries have attempted to develop such a syllabus by surveying specialists,[7] carrying out needs assessment,[8] and setting up working groups.[9,10] Of particular note, Paes and Wee[11] in the UK developed a palliative medicine syllabus with a clear methodology based on the Delphi method. However, this same syllabus is not easily applicable in Japan due to environmental differences in medical education and surrounding legal, social, and cultural issues.

Several investigations into palliative care education were conducted in Japan by Hirakawa et al.[12] and the Society for Palliative Care in University Hospitals in 1995, 1998, 2001, 2005, and 2009 (unpublished data). According to these investigations, palliative medicine is taught in all medical schools throughout Japan, but to differing amounts and with variable content. In contrast, another study revealed a need for high-quality and standardized education on palliative medicine among medical students[13] as a big factor in improving quality palliative care throughout the country.

The aim of this study was to develop a nationwide consensus syllabus of palliative medicine for undergraduate medical education in Japan. Herein, we clarify the essential learning objectives in palliative medicine that medical students should achieve, based on a modified Delphi method.

Methods

Different methodologies have been used to develop educational syllabuses.[7–11] A consensus method using the subjective opinions of several experts is appropriate way to develop a syllabus with clear methodology. We adopted the following three-step method to develop a nationwide consensus syllabus for palliative medicine for undergraduate medical education in Japan: (1) a workshop to produce the draft syllabus; (2) a survey-based provisional syllabus; (3) Delphi rounds and a panel meeting (modified Delphi method) to produce the working syllabus (Figure 1).

Step 1: Workshop for a draft syllabus

We first determined a structure and sections of the draft syllabus based on a literature review.[11,14–21] Secondly, we held a workshop to develop the provisional syllabus, involving six experts: four coordinators for undergraduate medical education in palliative medicine, one expert from the Japanese Society for Palliative Medicine, and one expert from Hospice Palliative Care Japan. Participants of the workshop were asked to review related syllabuses and reports.[3–6,11–23]

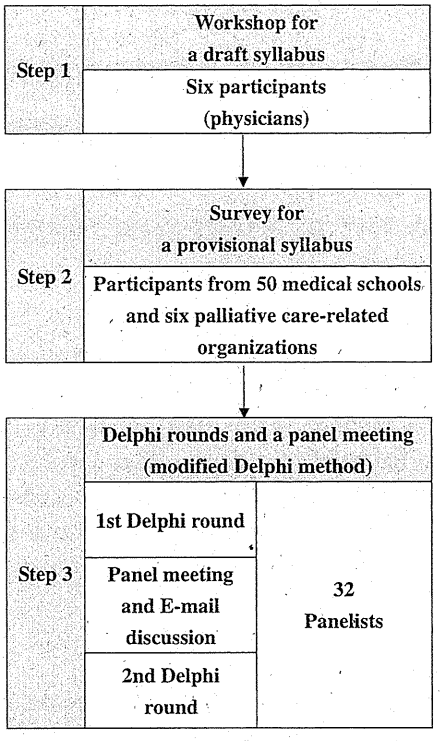

Figure 1. Three-step method to develop a consensus syllabus of palliative medicine for undergraduate medical education.

Step 2: Survey for a provisional syllabus

We next used the following methods to gather educator's real voices from medical schools and palliative care-related organizations and to assess inclusion characteristics and adequacy of the draft syllabus. Firstly, we contacted the medical directors of all 80 medical schools in Japan by mail in December 2009 and asked them to participate in the study and to recommend a coordinator for undergraduate medical education in palliative medicine as a panelist. We mailed them the draft syllabus and requested that a person in charge of education in palliative medicine cooperated with representatives from the nine palliative care-related organizations listed in Table 1; all agreed in January 2010. We investigated the adequacy of each learning objective to be achieved by graduation that would guarantee competency to manage patients with their mentor as a resident physician, as described in the syllabus, using a four-point Likert-type scale: 0 (essential), 1 (desirable), 2 (unnecessary), and 3 (unsure). We similarly examined the difficulty of each learning objective on a second

Table 1. List of palliative care-related organizations participating in this study

Hospice Palliative Care Japan
Japanese Academy of Family Medicine
Japan Geriatrics Society
Japan Psycho-Oncology Society,
Japan Society of Clinical Oncology
Japanese Society of Cancer Nursing
Japan Society for Medical Education
Japanese Society of Medical Oncology
Japanese Society for Palliative Medicine

four-point Likert-type scale: 0 (easy), 1 (adequately), 2 (difficult), 3 (too difficult). Panelists who rated objectives as 2 or 3 were asked for a reason. We also invited the medical directors to add any learning objectives that they felt were missing. Based on the results, the authors discussed each learning objective carefully and revised the provisional syllabus accordingly.

Step 3: Delphi rounds and a panel meeting (modified Delphi method)

We next adopted a modified Delphi method to achieve the consensus. Some expert participants had previously reported difficulty in scoring a particular learning objective without knowing exactly how it was going to be taught, and this was seen as a limitation of the original Delphi method.[11] A modified Delphi method that provides panelists with the opportunity to discuss their decisions and opinions face to face between the rating rounds[23] was used in several earlier investigations to develop a standard[22] and a guideline[24,25] in palliative medicine. This also facilitates the participants' understanding of each learning objective, and the opportunity to make each objective more understandable and achievable.

Panel member selection

There are no universally accepted criteria for the selection of panel members, but generally, using multidisciplinary panels best represents the variety of specialties available.[22] To gather a wide variety of opinion, we therefore chose panel members from the following groups: educators, representatives from palliative care-related organizations, patients and families as consumers of palliative care, and medical students to reflect the end user's viewpoint. In addition, we determined that no one group was represented by more than 50% of all panelists. The following panelists were finally selected based on the criteria below: (1) coordinator for undergraduate medical education of palliative medicine in medical schools (16 people; all physicians, 50% of all panelists); (2) representatives from palliative care-related organizations (eight people; seven physicians, and one nurse, 25%); (3) palliative care physicians with adequate experience (four people, 12.5%); (4) medical students (two people, 6.25%); and (5) patient and bereaved family (one of each, 6.25%). We could not select a palliative care physician to represent the Specialty Board of Palliative Medicine, Japanese Society for Palliative Medicine at the time of panel member selection due to availability. The board certification started in March 2010.

Criterion 1. Based on the Society for Palliative Care in University Hospitals investigation performed in 2009, 20 medical schools that teach palliative medicine across more than seven units over six years (until graduation) were selected. We chose 18 of those medical schools based on convenience and contacted the medical director by mail to participate in this study and to recommend a coordinator for undergraduate education in palliative medicine as a panelist. Of these medical schools, 16 accepted the invitation to take part.

Criterion 2. We contacted all eight nationwide palliative care-related organizations in Japan (Table 1), except for the Japanese Society for Palliative Medicine, by mail and asked them to participate in this study and recommend a panelist. As a condition of being a panelist, we proposed an extensive knowledge of palliative medicine and/or teaching experience of palliative medicine in a medical school. All the organizations contacted agreed to take part in this study.

Criterion 3. To choose the palliative care physicians, we contacted the Japanese Society for Palliative Medicine by mail and asked them to recommend panelists, including more than one physician engaged in home palliative care, more than one physician working as a member of a specialist palliative care team, and more than one physician practicing in a certified palliative care unit. We also proposed teaching experience in a medical school as a requirement for panelists.

Criterion 4. We chose two fifth or sixth-year medical students, who were interested in palliative medicine and understood its general concept, from the medical schools of the authors. We asked them to participate in this study by mail and obtained consent.

Criterion 5. We contacted the not-for-profit Cancer Patients Support Organization in Tokyo by mail and asked them to participate in this study and to recommend one cancer patient and one family member of a cancer patient as a panelist. We obtained consent from both panelists.

Data collection and analysis of the modified Delphi method

Firstly, we implemented a survey by mailing a questionnaire with the outline of a provisional syllabus to each panelist in February 2010. Each member was asked to rate the adequacy of each learning objective using a four-point Likert-type scale that enabled unnecessary learning objectives (not so important and unnecessary) to be eliminated, as follows: 0 (essential), 1 (desirable), 2 (not so important), and 3 (unnecessary). The remaining learning objectives could then be split into those that all students should achieve (essential) and those that a high-achieving student might achieve or a more generous curriculum might be able to deliver (desirable). In addition, each member was asked to rate the level of the difficulty in each learning objective using a four-point Likert-type scale to render each learning objectives more achievable if necessary, as follows: 0 (easy), 1 (adequately), 2 (moderately difficult), and 3 (too difficult). Panelists who rated objectives as 2 or 3 were again asked to give a reason. The frequency distribution and mode for each learning objective were determined, and consensus was defined as 75% of panel members rating the learning objective as essential or desirable. If more than 75% of panelists rated the learning objective as 2 or 3, it was excluded from the syllabus. A summary of the first-round data was sent to each panelist and author, and disagreements were discussed by email over one week. To gather the patients' and families' voices, one of the researchers (YK) explained the contents of each learning objective and any medical jargon to the lay panelists at the half-day meeting held before the first Delphi round.

Secondly, an expert panel meeting was convened for February 2010 in Tokyo. The purpose of the panel meeting was to give the panelists the opportunity to discuss their rating, controversial issues about the syllabus, and share their opinions and experience face to face based on the first-round survey results. One week before the panel meeting, the survey results showing how the panel as a group rated each learning objective was sent to all the panelists by email. At the meeting, one of the researchers (YK) facilitated the group. In the discussion, the group carefully reviewed the reasons for discrepancies among their ratings in the first-round survey (i.e. genuine disagreement, difficulty of determining each learning objectives, or wording problems). The group particularly discussed those learning objectives that (1) less than 75% of panelists rated essential or desirable, and (2) more than 10% of panelists rated too difficult. Accordingly, we tried to revise these learning objectives to be more adequate and achievable. Researchers encouraged the students, patients, and families to contribute their opinions throughout the meeting, explaining the contents of the syllabus and any medical jargon as needed. After that panel meeting, a summary of the meeting and a revised version of the syllabus were sent to all panelists to confirm corrections and gather any additional options.

Thirdly, we implemented a second-round survey using the same method as in the first-round survey, except that we did not ask respondents to rate the adequacy of the difficulty of each learning objective. We planned to continue Delphi rounds until the consensus was achieved. We devised the final version of the syllabus in advance, based on the following rules adapted from previous research[11] to better express the importance of each learning objective: (1) essential, more than 75% of panelists rated it as essential; (2) essential in italics: 50%–75% of panelists rated the objective as essential and more than 75% of panelists rated it as essential or desirable; (3) desirable: less than 50% of panelists rated the objective as essential and more than 75% of panelists rated it as essential or desirable; (4) desirable in italics: less than 50% of panelists rated the objective as essential and 50%–75% of panelists rated it as essential or desirable. This study was conducted from October 2009 to March 2010. The protocol was approved by the Institutional Review Board of the Graduate School of Comprehensive Human Sciences, University of Tsukuba. All statistical analyses were performed with the Statistical Package for the Social Sciences (v 16.0J; SPSS Japan, Tokyo, Japan).

Results

Developing the provisional syllabus (Steps 1 and 2)

In Step 1, the draft syllabus comprising 126 learning objectives across seven sections was designed based on the workshop with six experts and the authors.

In Step 2, we contacted all 80 medical schools in Japan to participate in devising the provisional syllabus and recommend coordinators for a national undergraduate medical course in palliative medicine. Sixty-one medical schools (76%) answered this request, and 50 medical schools (63%) cooperated in the final study. We also invited eight other people from palliative care-related organizations to participate in this study as panel members, of whom six people consented to take part. Among 56 people contacted, 49 returned an answer (response rate, 88%). Of these, 39% of participants had clinical experience in palliative care of more than five years and 59% had experience in palliative care education of more than five years (Table 2). In the survey, 123 of the 126 learning objectives were judged to be essential or desirable by more than 75% of respondents, and 40 items were judged to be too difficult by more than 10% of respondents. The ratings of

Table 2. Background of participants in Step 2 (survey for the provisional syllabus) of this study ($n = 49$)

Sex	
Male	40
Female	9
Specialty	
Physician	
Palliative medicine	13
Medicine	4
Surgery	8
Anesthesiology	19
Psychiatry	2
Others	3
Clinical experience of more than 10 years (%)	48 (98%)
Clinical experience in palliative care of more than 5 years (%)	19 (39%)
Experience in palliative care education of more than 5 years (%)	29 (59%)

each section of the syllabus are summarized in Table 3. We analyzed and discussed the reasons for disagreement and adequacy of difficulty, and then revised the provisional syllabus accordingly to consist finally of 115 learning objectives across the seven sections. We excluded 11 learning objectives and did not add new learning objectives in this step. The number and categorization of learning objectives are summarized in Table 4.

The modified Delphi method

Table 5 summarizes the background data for all palliative care panelists. Of the 28 medically qualified panelists, 27 were physicians and one was a nurse, while 25 had experience working as palliative care specialists, and 27 had teaching experience in palliative medicine. Two of the remaining four panelists were medical students, one panelist was a bereaved family member, and one panelist was a breast cancer survivor and pharmacist. All 32 panelists responded to the first-round survey, and 26 (81%) participated in a panel meeting (Table 4).

In the first-round survey, 105 of 115 (91%) learning objectives were judged to be essential or desirable by more than 75% of respondents, while 21 learning objectives were judged to be too difficult by more than 10% of respondents (Table 3).

In the panel meeting, all learning objectives were examined carefully, in particular those that (1) less than 75% of panelists rated essential or desirable and (2) more than 10% of panelists rated too difficult.

Table 3. Expert panel scores in each section of the syllabus in Steps 2 and 3 of this study

	Learning objectives (LOs)		Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Total
Number of LOs more than 75% of panelists rated essential or desirable/ Number of LOs in each section (%)	Step 2	Provisional syllabus	7/7 (100%)	7/7 (100%)	56/56 (100%)	34/37 (92%)	3/3 (100%)	10/10 (100%)	6/6 (100%)	123/126 (98%)
	Step 3	1st Delphi round	7/7 (100%)	4/5 (80%)	50/54 (93%)	25/30 (83%)	3/3 (100%)	10/10 (100%)	6/6 (100%)	105/115 (91%)
		2nd Delphi round	7/7 (100%)	5/5 (100%)	57/61 (93%)	31/31 (100%)	3/3 (100%)	10/10 (100%)	5/5 (100%)	118/ 122 (97%)
Number of LOs more than 10% of panelists rated too difficult/ Number of LOs in each section (%)	Step 2	Provisional syllabus	4/7 (57%)	0/7 (0%)	6/56 (11%)	26/37 (70%)	1/3 (33%)	2/10 (20%)	1/6 (17%)	40/126 (32%)
	Step 3	1st Delphi round	1/7 (14%)	0/5 (0%)	4/54 (7%)	13/30 (43%)	0/3 (0%)	2/10 (20%)	1/6 (17%)	21/115 (18%)

Section 1: Basic principles; Section 2: Disease process and comprehensive assessment; Section 3: Symptom management; Section 4: Psychosocial care; Section 5: Spirituality, culture, and religious issues; Section 6: Ethics; and Section 7: Legal frameworks.

Table 4. Numbers and categorization of learning objectives (LOs) in all steps of this study

	Step 1	Step 2	Step 3			
	Draft syllabus	Provisional syllabus	1st Delphi round	Panel meeting	2nd Delphi round	Final Syllabus
Number of people invited	6	56	32	32	32	-
Number of participants (%)	6 (100%)	49 (88%)	32 (100%)	26 (81%)	32 (100%)	-
Number of added LOs	-	0	-	11	-	-
Number of excluded LOs	-	11	-	4	-	7[d]
Total Number of LOs	126	115	115	122	122	115
Number of LOs in Category 1[a]	-	11	6	-	18	18
Number of LOs in Category 2[b]	-	23	25	-	52	48
Number of LOs in Category 3[c]	-	89	74	-	48	45

[a]Category 1: essential; more than 75% of panelists rated the objective as essential.
[b]Category 2: essential in italics; 50%–75% of panelists rated the objective as essential and more than 75% of panelists rated it as essential or desirbale.
[c]Category 3: desirable; less than 50% of panelists rated the objective as essential and more than 75% of panelists rated it as essential or desirable.
[d]Two LOs were combined into one LO in Section 1. In Section 6, three LOs were combined into one LO, two LOs were combined into one LO in Category 2, and four LOs were combined into one LO in Category 3.

Table 5. Background of panelists in Step 3 (modified Delphi method) of this study

Sex	
Male	25
Female	7
Specialty	
Physician	
Palliative medicine	9
Medicine	4
Surgery	2
Anesthesiology	8
Psychiatry	2
Others	2
Nurse	1
Medical student	2
Patient	1
Family	1
Clinical experience of more than 10 years (%)	27 (96%)
Clinical experience in palliative care of more than 5 years (%)	18 (64%)
Experience in palliative care education of more than 5 years (%)	21 (75%)

Subsequently, 11 new objectives were added and four objectives were excluded during the panel meeting. In addition, we reworded the learning objectives judged as difficult to be more understandable and achievable. The learning objectives numbered 122 across seven sections after the panel meeting.

In the second-round survey, all panelists responded, with 118 of 122 (97%) learning objectives rated to be essential or desirable by more than 75% of respondents (Table 3). The remaining four outcomes were rated essential or desirable by 71%, 71%, 74%, and 74% of panelists, respectively. No learning objectives were rated to be unnecessary or not so important by more than 75% of respondents. We decided to finish the Delphi rounds after the second-round survey, because most of the stated learning outcomes had achieved consensus. For satisfactory statements that include correcting a mode of expressions, movement of the learning objectives among the sections, and binding similar objectives together, we revised them based on a discussion among authors, with the result that 11 learning objectives were combined into four learning objectives.

The final version of the syllabus (available on request from the corresponding author) consists of 115 learning objectives across seven sections as follows: Section 1, Basic principles; Section 2, Disease process and comprehensive assessment; Section 3, Symptom management; Section 4, Psychosocial care; Section 5, Cultural, religious, and spiritual issues; Section 6, Ethical issues; and Section 7, Legal frameworks. Learning objectives were categorized as essential or desirable (essential: 66; desirable: 49).

Discussion

To the best of our knowledge, this study produced the first consensus syllabus of palliative medicine for undergraduates developed using a modified Delphi method.

We used three innovative processes to develop the syllabus. Firstly, according to the modified Delphi method, we use email discussion and panel meetings between the first and the second rounds of our Delphi study. These participants discussed backgrounds and reasons for their rating of each learning objectives and shared their opinions with each other,[23] with the aim of making the learning objectives more adequate and achievable. This process increased the number of learning objectives that more than 75% of participants rated essential (Category 1 in Table 4) from six to 18, while the numbers of learning objectives that 50%–75% of panelists rated as essential and that more than 75% of panelists rated as essential or desirable (Category 2 in Table 4) increased from 25 to 52 between the rounds. The panel meetings also enabled us to hear patient, family, and student voices directly, leading to a wider range of opinions about the syllabus. Subsequently, four learning objectives were excluded and 11 learning objectives were added.

Secondly, in the survey on the provisional syllabus and the first Delphi round, we evaluated the degree of difficulty for each learning objective. In general, when developing the syllabus, learning objectives tended to increase in number during the process as it proceeded. We subsequently discussed and rewrote the objectives rated as too difficult by more than 10% of panelists to make them more achievable and understandable. The number of learning objectives that more than 10% of participants rated too difficult decreased from 40 to 21, mostly due to decreases in Section 1 (Basic principles), Section 3 (Symptom management), and Section 4 (Psychosocial care) (Table 5), between the survey to develop the provisional syllabus and the first Delphi round. This process could make the syllabus more realistic, and easier to use for both students and teachers.

Thirdly, patients and family members as the consumers of palliative care, and medical students as the users of the syllabus, were enrolled as panelists, with the opportunities to rate the appropriateness of the objectives and to add new learning objectives. For example, we added three learning objectives about bereavement and psychosocial support to patient and family in Section 4 (Psychosocial care) during the panel meeting. We believe that these same three innovative processes undertaken to develop the educational syllabus on palliative care could also be adapted for other medical specialties, and indeed for any investigations using a Delphi method.

This is the first consensus syllabus of palliative medicine for undergraduate medical education in Japan developed using a clear methodology. Our intent in designing this study and developing the syllabus was not to prescribe exactly how the syllabus should be implemented, because every medical school has a different curriculum and the sites of palliative medicine vary. For example, the teaching setting might range from a classroom to a clinical clerkship at a palliative care unit. Instead, we designed the curriculum to be objective based, and therefore easy to adapt to any medical school. According to a previous investigation, most medical schools in Japan will not engage specialists in palliative medicine to teach all the learning objectives.[13] It would therefore be up to the coordinator for undergraduate medical education in palliative medicine within a given school to ensure that the essential learning objectives are covered within their program.

This new Japanese undergraduate syllabus has three major differences compared with the curriculum described previously in the UK[11] and USA.[7] Firstly, throughout the syllabus, there are few objectives using the expression of 'demonstrate' as a verb, especially in Section 4 (Psychosocial care). This arose because most of the bedside learning in Japanese medical school tends to be by observation. Japanese medical students tend to not have enough opportunities to manage and communicate with patients and families directly. This educational circumstance could affect the rating of the panel members from a realistic standpoint. Secondly, there is only one learning objective in the rehabilitation section. This was because Japanese medical schools tend to give acute medicine-oriented education, with insufficient time allowed to teach on rehabilitation medicine in the undergraduate curriculum. Thirdly, there is no description of decision making in cases of diminishing mental capacity and proxy decision making. This may be because we do not have any legal guidelines in Japan regarding decision making by patients with limited mental capacity.

This study had some limitations. Firstly, the email discussion and the panel meeting between the two Delphi rounds remove the anonymity of an individual's views, which might affect the rating of the second Delphi round, although the Delphi round itself retained its anonymity. As researchers, we considered it beneficial for panel members, especially those who are patients, bereaved family members, or students, to discuss their opinion and share their experience with all the panelists, and that this benefit would exceed any disadvantage. Secondly, the syllabus might not reflect the user's or consumer's voice sufficiently because of the panel selection process used. A Delphi process aims to look at what the majority think and sidelines minority views. In this study, we aimed to overcome this limitation by explaining the contents and medical jargon before the Delphi round and facilitating the panel members' comments and sharing of experience during the panel meeting. It might be useful to also conduct separate focus groups or external reviews of patients,

bereaved family, and medical students to influence the panel to overcome the problem.

In conclusion, we developed a consensus syllabus on palliative medicine for undergraduate medical education using a clear methodology. We used three innovative process to develop the syllabus, namely: (1) email discussion and panel meeting between the first round and the second round of the Delphi study to discuss and share opinions among panel members – we denoted this the modified Delphi method; (2) evaluation of the degree of difficulty for each learning objective to make them more realistic and achievable; and (3) enrolled patients, family members, and medical students as panelists to gather the consumer's and user's opinion for developing the syllabus. These processes could be adapted to not only develop a syllabus for other medical specialties, but also for any investigations that uses a consensus method. Based on this syllabus, a learning program on palliative medicine will be established by all medical schools in Japan and all physicians will be able to practice basic palliative care in the future.

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Conflict of interest statement

The authors declare that there is no conflict of interest.

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