いる医療機関が対処すべきであり，また現実に多くの介護施設が医療機関へ対応を依頼していると考えられる．そのときに医療機関が即座に対応できれば問題ないが，例えばBPSDが夜勤時間帯に突発的に生じた場合などには即応できないことの方が多い．筆者の知る限り，BPSDに対する救急体制の整った専門医療機関はわが国にはほとんど存在しない．そのため介護施設では，仮に許容範囲を超えるBPSDであっても，自分たちで介護せざるを得ない状況が存在する．BPSDへの介護困難は大きな負担となり，介護職員にBPSDを呈した入所者への陰性感情を惹起する．そして，その陰性感情がさらなるBPSDを誘発するという悪循環を形成する．介護負担感の軽減は，介護職員の心理環境を改善するのみならず，この悪循環を断ち切るためにも有用であると考える．介護施設において生じたBPSDへの対応手順(主として非薬理学的介入方法)に関する医学報告は数多く存在し，比較的強い医学的エビデンスをもった報告も少なくはない[8,9]．報告どおりの方法で対応することにより，BPSDは軽減し介護負担も減少することが示されている．しかしながら，それらの報告の大半は海外で行われたものである．残念ながら現在，わが国の介護施設のおかれている現状を鑑みると，それらの良質な対応手順に沿った対処を実践できる施設は数少ないのではないかと想像する．そこでわれわれは，わが国の実情に合わせたBPSD対応マニュアルとして，『BPSD初期対応ガイドライン』[10]を作成した(図1)．このガイドラインには，専門医師がいない介護施設もしくは医療機関において突発的に生じたBPSDへの実践的な初期対応の方法を示した．

図1　「BPSD初期対応ガイドライン」

『BPSD初期対応ガイドライン』に期待される効果

本ガイドラインには，以下の特徴をもたせた．

①現場ですぐに使用できるよう，疾患別ではなく症状別に項目立てした．

②症状ごとの対応を，「ただちにできるケア(非薬物療法)」→「現場でできる薬物療法」→「認知症専門医へ紹介すべき状態」の順にフローチャート形式で示した．

③一目で見てわかるよう，フローチャートを図示した(図2)．

①については，介護施設入所者には認知症の詳細な診断がついていないことが多く認められることと[11]，症状別の方が現場に即しているだろうとの考えから，症状別の項目立てにした．③については，今まさにBPSDが生じているその現場で使用できるようにという思いで作成した．いずれも実践的に使われることを前提に構成してある．書架に飾るような辞書的な役割はもたせていないので，「BPSDの背景にある原因」といった学術的知識の部分には，ほとんど紙面を割いていない．したがって，本書を学術の書として通読していただく必要はないし，その目的であればほかに良書はいくらでもある．介護の現場にBPSDを専門とする医師や看護師が出向くことは難しい．が，もしも専門とする者が現場に出向いたとしたならば，きっと本書に書かれていることと同じことを指示するはずである．そういうエッセンスを集めた．専門医のいない介護の現場に，専門医から指示を出すようなイメージ．それが本ガイドラインに与えた1つ目の役割である．

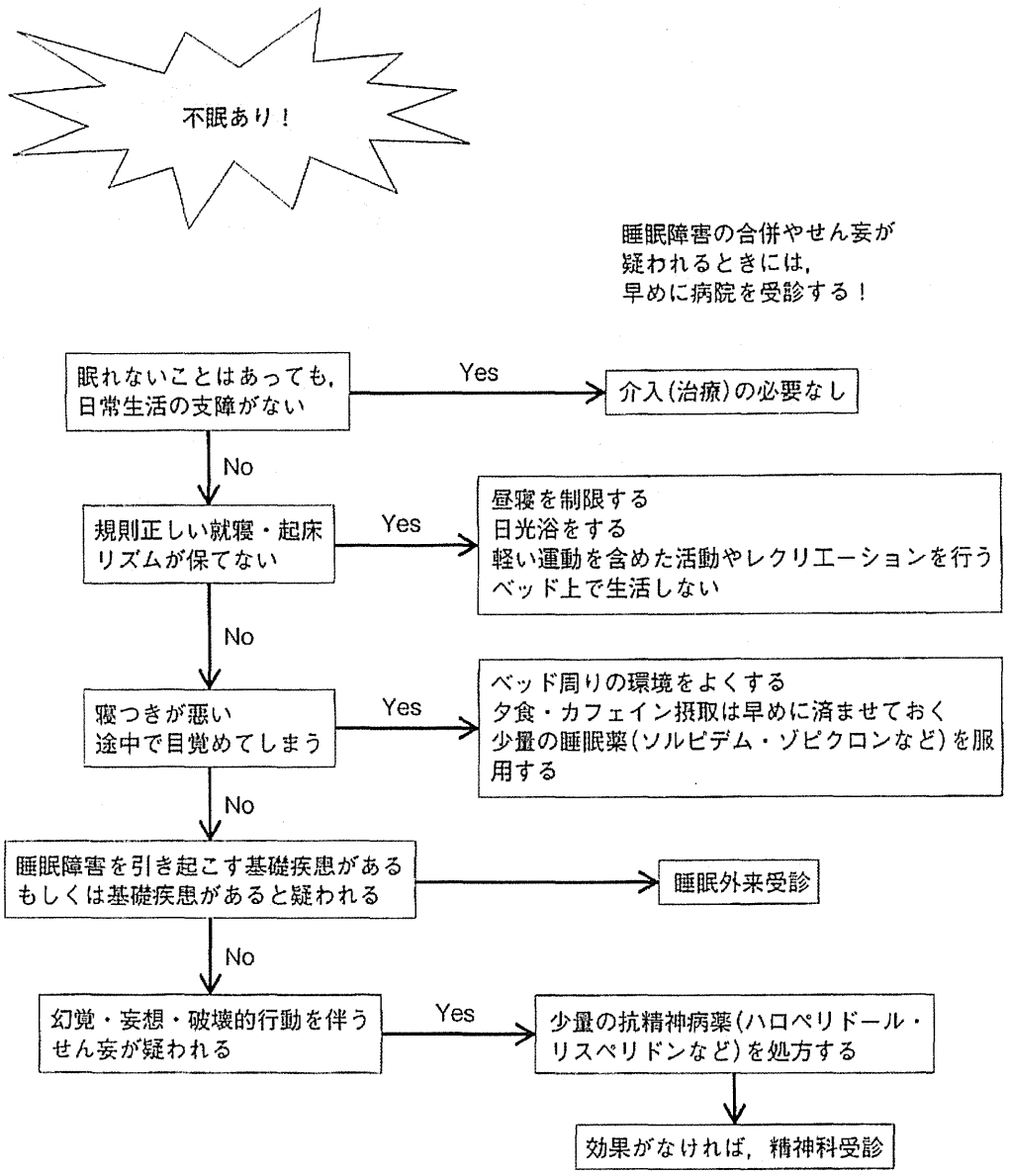

図2　フローチャート

文献10より引用

②については，非薬物治療から薬物治療へという標準的なBPSD治療を示すとともに，介護施設でできる限界点を示した．介護スタッフは，「一生懸命介護したのに，うまく介護ができなかった」と思うとき，職業上の無力感を感じるであろう．BPSDは患者本人のみならず，介護職員にとっても大きなストレスとなるのである．そんな無力感に苛まれるようなとき，介護施設での対応の限界点が呈示されていれば，「施設ではここまで対処すればいいんだ」「これ以上は専門科じゃないと無理なんだ」と感じられるのではないだろうか？　そのことで，職業上の心理負担は多少なりとも軽減するのではないだろうか？　このことは困難な介護から目を背けるというのとは，全く意味が違う．介護施設には介護，医療機関には医療という大きな役割分担がある．その役割分担の不明瞭な部分に，介護施設でのBPSDが存在する．多少恣意的ではあっても不明瞭な部分に線引きすることで，「うまく介護ができなかった」という後ろ向きな気持ちを，「施設でできる限界ギリギリまで介護したんだ」という満足感に変換することができるのではないだろうか？　本ガイドライン作成に当たっては，自験例のみならず内外の良質な医学研究を参照し万全を期したが，このガイドライン自体の医学的有用性の検証は行っていない．われわれは現在，本ガイドラインが介護負担感を軽減させることができるか否かの検証を行っている．介護負担感の軽減は，BPSDを呈した入所者への陰性感情を軽減させてくれる．そのことは巡りめぐってBPSDの軽減につながる．これが本ガイドラインに与えた2つ目の役割である．

以上に述べた事柄が，本ガイドラインに期待する効果であり，われわれがまさに今検証していることである．

おわりに

わが国においては，高齢者人口の増加に伴い今なお認知症患者が増え続けている．少子高齢化という言葉は，介護の必要な高齢者が増加しても，若き介護者が増えることは期待できないことを意味している．少ないマンパワーで効率よく介護してゆく方法を模索してゆかねばならない．本ガイドラインがその一助にならんことを切に願っている．

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REVIEW ARTICLE

Role of geriatric hospitals for dementia care in the community

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Abstract

In dementia care, behavioural and psychological symptoms of dementia and physical illness in patients with dementia impose a marked care burden and require medical intervention. Therefore, it is important for patients and their families to select appropriate medical institutions and facilities with nursing units specializing in the care of behavioural and psychological symptoms of dementia, such as geriatric hospitals, which are required to deal with various aspects of dementia. Geriatric hospitals should offer two treatment approaches: a care unit for patients with behavioural and psychological symptoms of dementia or dementia with physical illness, and a multidisciplinary team approach involving physicians, nurses, psychologists, and social workers who provide coping strategies for dementia patients.

In dementia care, there are two important phases that require patients to have a social network. The first phase involves the early detection of dementia, leading to early treatment. The second phase is care for patients with behavioural and psychological symptoms of dementia (BPSD) and for dementia patients with physical illness. These medical conditions impose a marked care burden, require medical intervention, and particularly in the case of BSPD, are difficult to manage and assess. Therefore, it is important that patients and their caregivers select appropriate medical institutions and facilities that have nursing units specializing in the care of BPSD, and ideally, general hospitals, independent psychiatric hospitals, and nursing facilities will cooperate in treating these patients. However, there is little available information regarding which hospitals specialize in patients with psychological symptoms of dementia and related complications or which hospitals have physicians and nurses specializing in BPSD management. The lack of information makes it difficult for patients and caregivers to find and use these services.

In dementia care, two types of community networks are necessary for providing the most effective treatment for patients: direct and indirect networks. Direct networks involve direct relationships with medical institutions and nursing facilities and can be achieved through face-to-face encounters such as workshops, community network clinical pathways, and regular meetings. Indirect networks can help improve how hospitals address the needs of dementia patients and manage BPSD and can enable these facilities to work together to increase hospitals admissions for dementia patients with physical illnesses. Geriatric hospitals should deal with various aspects of dementia care by participating in these two types of community networks.

According to Washimi, geriatric hospitals must be able to provide three services for dementia patients: (i) differential diagnosis of dementia symptoms; (ii) the treatment of depression and delirium during the course of the disease; and (iii) the acceptance and treatment of patients requiring hospital admission due to physical complications.[1] In July 2008, the Japanese government published 'Urgent Project for Enhancement of Medical Treatment of Dementia and Improvement of Life Quality',[2] which outlined a plan for dementia care centres that has become the centrepiece of the government's program to address dementia.[3] The plan involves establishing dementia care centres at approximately 150 general hospitals to offer patients comprehensive medical assessment,

including general physical examination, diagnostic imaging, and neurological and psychological tests; medical staff at these centres will be composed of dementia care specialists and physicians, nurses, psychiatric social workers, and clinical psychologists who can provide specialized care. Each dementia care centre has three primary functions as:

- information centres, which provide and distribute dementia-related information, promote the dementia care centre via the media and offer consultation services for local residents regarding dementia
- specialized medical care centres, which offer detailed differential diagnoses, appropriate individualized treatment, and management of acute psychosis and physical complications
- community network partners, whicht can establish a medical cooperation council and a face-to-face networking system, conduct workshops, improve diagnostic and management skills to avoid complications, offer special consultation services, and use local resources to provide services to patients who require special care.

The major purpose of the dementia care centres is to provide specialized medical care, including differential diagnoses of dementia symptoms, the treatment of depression and delirium during the course of the disease, and the acceptance and treatment of patients requiring hospital admission resulting from physical complications. The National Center for Geriatrics and Gerontology (NCGG) in Obu, Japan was certified as a dementia care centre in April 2011. The NCGG has employed two types of approaches to ensure that the appropriate standard of care is met: a dementia care unit and multidisciplinary teams. By making full use of its institutional resources, the NCGG has set up a care unit for patients with BPSD and dementia patients with physical illness whose conditions were not manageable through home-based care, nursing care facilities, or general hospitals. The dementia care unit takes full advantage of the NCGG's capabilities as a specialized geriatric hospital, and its staff of physicians, nurses, and other health-care providers are trained in the treatment of elderly-specific diseases. This care unit was designed to enable both the care of patients in the subacute phase after surgery and the management of chronic internal, otorhinolaryngological, and dermatological diseases in patients with BPSD and those with dementia suffering from delirium.

The multidisciplinary team approach involves physicians, nurses, psychologists, and social workers who provide patients with coping strategies to deal with delirium and BPSD in the physical illness ward; the team is, known as the Dementia Support Team. The Dementia Support Team members determine whether a patient's condition warrants transfer to the

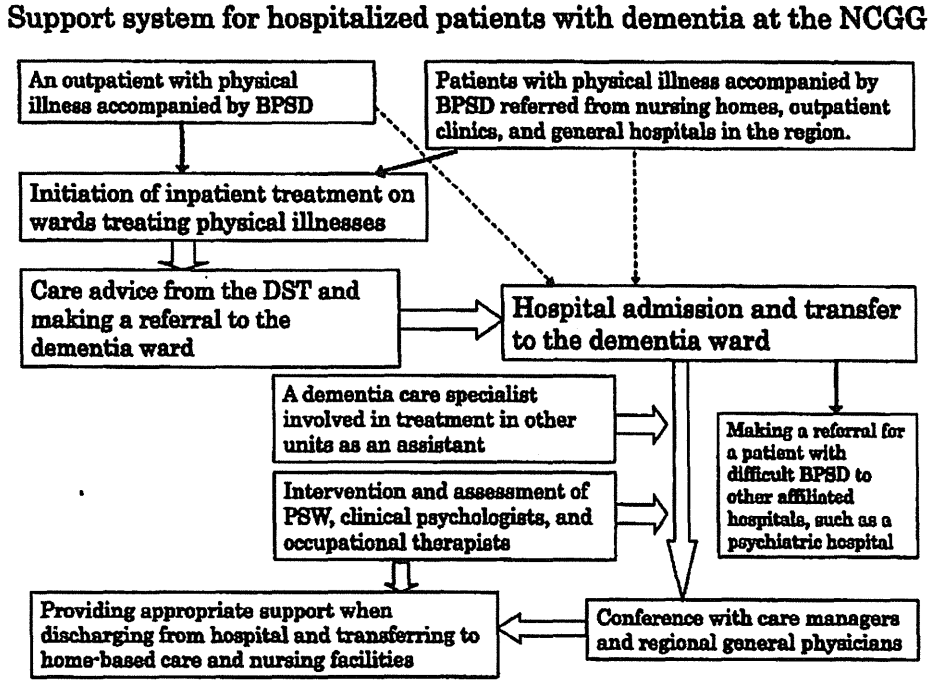

Figure 1 Support system for hospitalized patients with dementia at the National Center for Geriatrics and Gerontology (NCGG). BPSD, behavioural and psychological symptoms of dementia; DST, Dementia Support Team; PSW, psychiatric social worker.

dementia care unit and provides support when a patient is discharged or transferred to the unit. The Dementia Support Team works closely with the dementia care unit to ensure the highest standard of care (Fig. 1). It is hoped that these combined approaches will facilitate the management of dementia patients with physical complications whose condition might not be manageable on a general ward. Additionally, it is hoped that the dementia care centre will become a core part of the community network and increase the number of inpatients with BPSD who are treated.

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地域ケアで患者を支える

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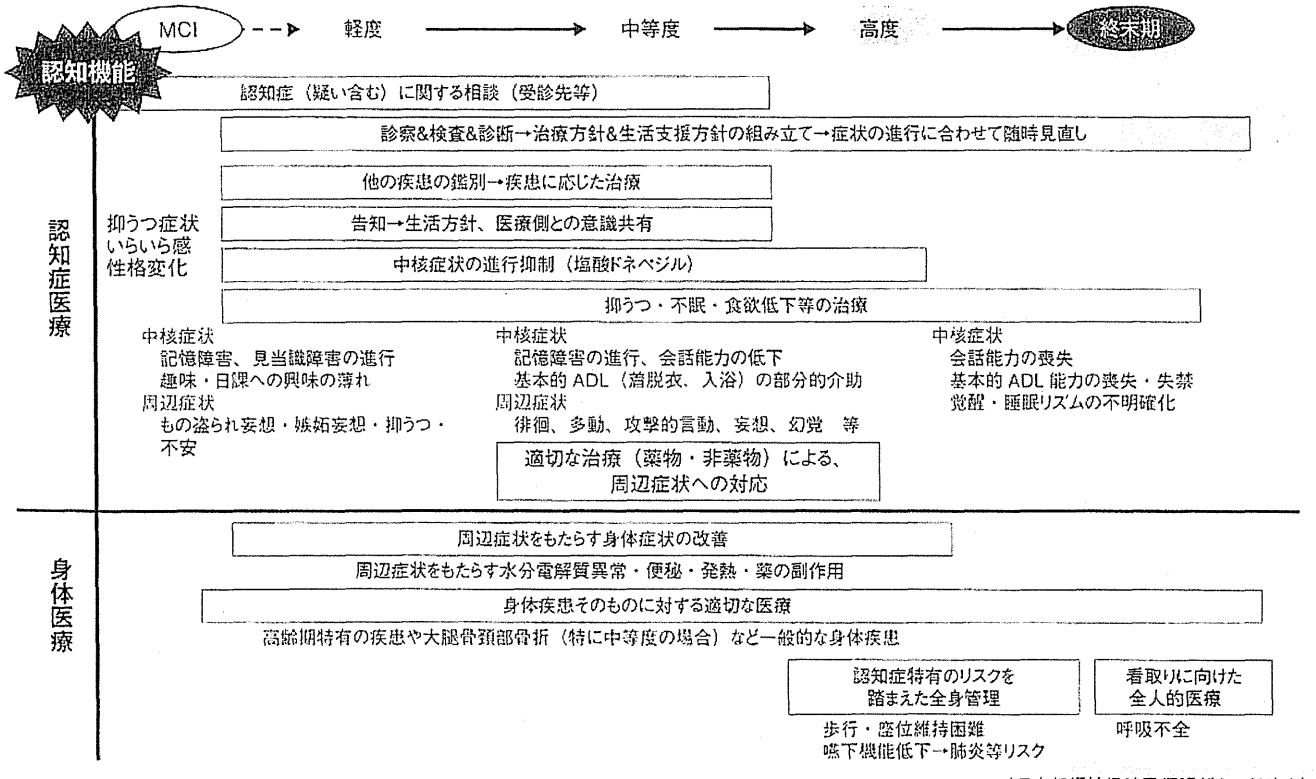
はじめに

認知症の地域連携、ケアを考えるうえで、まず認知症の特性について押さえておく必要がある。認知症は単一疾患ではなく、さまざまな原因疾患を背景にして生ずる脳機能損傷から出現する症候群であって、多彩な症状の発現がみられる。たとえ基礎疾患が同じであっても現れる病像は個人差が大きく、併存する身体疾患、取り巻く環境などの影響を強く受ける。さらに、多くの認知症例は長期の経過をとるが、認知機能障害が軽度の時期、重度の時期では状態像が大きく異なり、必要とされる介護の質が変化するという特性もある。

アルツハイマー型認知症を例にとると、初期の段階では、診断を適切に下すこととともに、診断に基づいた生活



（東京都福祉保健局編資料を一部改変）

図1　認知症の経過と必要な医療
（アルツハイマー型認知症等変性疾患の場合）

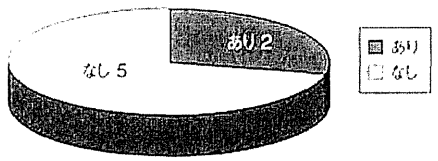
援助を本人の能力に応じて支援する体制づくり、疾患の知識、介護サービスの利用法などを家族へ伝えることが重要であり、抗アルツハイマー病薬の使用も積極的に勧められるであろう。認知機能低下が進むと一般的に徘徊などの行動障害や着脱衣、入浴などの生活機能障害が顕著になり、介護困難の度合いが増してくるためデイサービス、ショートステイ、ホームヘルプなどの介護サービスの積極的利用が求められる。認知症に伴う精神症状・行動異常（BPSD）に対して抗精神病薬の使用なども必要となろう。末期になると日常生活機能低下が著しくなり、栄養や水分補給、感染症予防といった身体管理の重要性が増してくる。身体治療のための入院や施設入所の必要性が増してくるし、在宅の場合は訪問看護、自宅の改造などが求められる（図1）[1]。

以上をまとめると、認知症には、原因の多様性、症状の多様性（個体差、経時的変化）が考慮される必要があり、認知症患者・家族を取り巻く地域におけるさまざまな職種、施設の連携があって初めて、行き届いた診療、ケア、介護を進めることができる。

認知症医療の課題

上記のような特性を持つ認知症、とくに認知症に伴う精神症状・行動異常（BPSD）に対する医療、介護の現状はどうであろうか。

国立長寿医療研究センターが位置する知多半島において精神科医療機関に対して行ったアンケート調査結果の一部を紹介する。対象は知多半島地域及び近隣の単科精神科病院、総合病院精神科、精神科クリニックである。内訳は単科精神科病院7件、クリニック、総合病院14件である。その結果、認知症の専門治療はすべての精神科病院で行われているわけではなく、むしろ少数にとどまっていた（図2-A）。認知症患者の治療において難渋するのは純粋な精神症状というよりもむしろ内科疾患や、嚥下障害、歩行障害といった神経症状であった（図2-B）。認知症診療における地域連携の具体的実践として求められているのは、病院、クリニックともに地域の医療機関の情報公開であった（図2-C）。さらに他の調査結果を総合してみると、認知症診療における表1のような問題点が浮かび上がってきた。



重度認知症加算をとっている患者数	0
重度認知症患者デイケアを行っていますか	0

図2-A　認知症患者専用病棟の有無

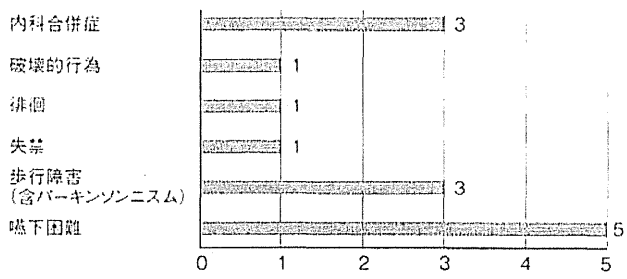


図2-B　治療困難な重度認知症の症状（複数回答）

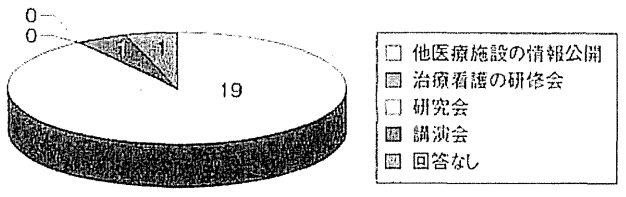


図2-C　診療ネットワークづくりにおいて期待するもの

◉認知症地域連携において求められるもの（身体疾患治療、BPSD）

このような状況から考えると、認知症診療において地域連携が必要とされる局面は2つであるように思われる。一つは、地域における認知症患者の早期発見とそこから早期治療につないでいくこと。もう一つは、介護負担が大きく、医療介入が必要なBPSD患者及び身体疾患を併発した認知症患者の診療である。

早期発見・早期治療についてはすでに多くの地域できまざまな取り組みがなされている。国立長寿医療研究センターのある大府市においても、地域の医師（大府市医師団）と連携でクリニックレベルでの早期発見と専門病院であるセンターへの円滑な紹介ができるシステムを構築してきた。一方で、BPSD患者の地域連携上の問題点として、BPSD自体が治療介護困難であること、症状把握の困難さ、合併身体症状の治療困難（手術など入院時の管理）があげられる。また、BPSDの何に焦点をあてた介護診療を行うかで担当すべき医療機関、施設が適切に選択できるかが重要になる。すなわち、症状自体の治

表1　認知症診療の現状（アンケート結果から）

1．専門医療を提供する医師や医療機関の数が不十分
2．認知症を専門としない医療関係者の認知症に関する理解が不十分
3．認知症の行動・心理症状に対する治療が未確立
4．身体合併症の治療が適切に行われていない

療、管理が目的か、合併身体症状の治療のための管理かといった問題である。目的に沿って総合病院、単科精神科病院、老人保健施設などがニーズに合った形で有機的に連携できることが望ましいが、そのための情報が決定的に不足している。どの病院が精神症状をみることができるのか、合併症状を治療するためのスタッフ、BPSD管理の専門家がいるのかなどの情報が本当に必要な場面で利用できない状況がみられる。

診療介護の困難なBPSD例に対して地域の中で連携をとりながら対応していくために重要な役割を果たすのが、認知症疾患医療センターと地域包括支援センターである。

●認知症疾患医療センター

認知症疾患医療センターは平成20年度より、地域における認知症医療の中核として厚生労働省が都道府県、政令市に呼びかけて設立している。基本的に総合病院であり、認知症の診断、治療、身体合併症の治療を行うことができ、地域の認知症診療の中核となることが期待されている。全国で150か所の設置を目標としているが、地域による偏在が激しく、熊本県、大阪府では多くの認定施設があるが、まったく存在しない地域もある。しかしながら、次々に認定機関が増加している。平成23年2月9日現在、29都道府県、7指定都市の98か所設置されており、今後も設立の計画が進んでいる（図3）[2]。

認知症疾患医療センターの主たる機能は専門医療の提供、地域連携の強化、認知症に関する情報センターとなることの3つである。とくに、認知症の早期発見、確定診断をつけること、認知症に伴うBPSD及び身体合併症治療において専門的貢献が求められる。

国立長寿医療研究センターも平成23年4月より地域型認知症疾患医療センターとして承認された。当院はベッド数300床の総合病院であり、骨粗鬆症、骨折、褥瘡、慢性呼吸不全等、高齢者に特有のさまざまな疾患に対応できる体制づくりをめざしている。認知症診療も重点的に行っており、平成22年よりもの忘れセンターを開設し、老年科、神経内科、脳神経外科、精神科といった認知症関連科が年間約1,000例の新患を診療している。すべての症例について血液、放射線（MRI、脳血流シンチなど）、神経心理学的検査を行っており、データ蓄積が進んでいる。

●地域包括支援センター

2005年の介護保険法改正で制定された、地域住民の保健・福祉・医療の向上、虐待防止、介護予防マネジメントなどを総合的に行う機関である。中学校区を一つの単位として全国で5,000か所程度整備することが予定さ

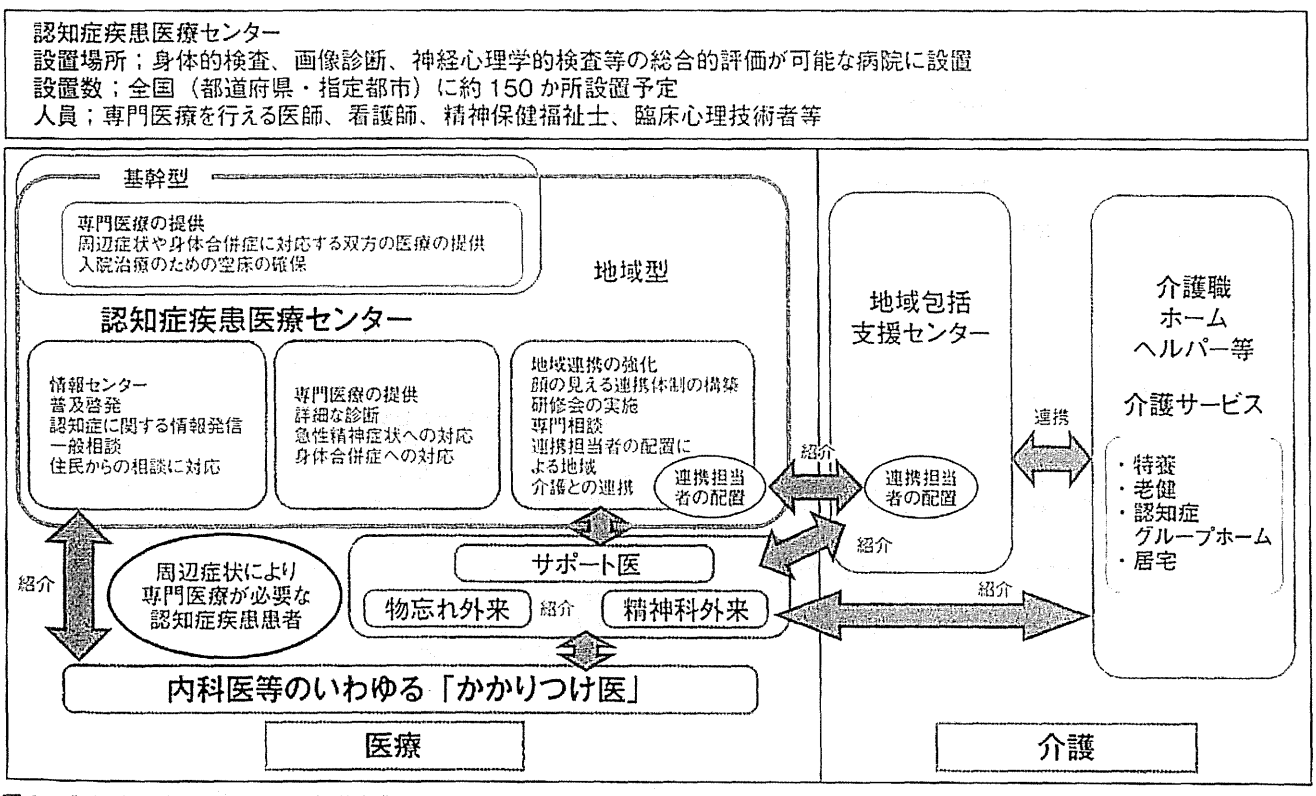


図3　認知症疾患医療センター運営事業

れている。センターには、保健師、主任ケアマネジャー、社会福祉士が置かれ、専門性を生かして相互連携しながら業務にあたる。法律上は市町村事業である地域支援事業を行う機関であるが、外部への委託も可能である。要支援認定を受けた者の介護予防マネジメントを行う介護予防支援事業所としても機能する。

その業務内容は、認知症疾患医療センターとの相談・連絡、認知症患者の権利擁護の専門家等との相談・連絡、他の地域包括支援センターへの専門的な認知症ケア相談、定期的な巡回相談、具体的な援助等となっている。認知症疾患医療センターの「連携担当者」と地域包括支援センターの「認知症連携担当者」が連携し、切れ目のない医療と介護のサービスを提供するとともに、地域ケアに対する専門的な支援を実施することが求められる。

今後の地域連携について

現在、各地で認知症医療・介護のための地域連携組織が立ち上げられている。それらは、地域連携パスの使用、研修会などによる相互交流などにより、患者の転院、紹介などを円滑に行うことをめざしており、直接「顔の見える」連携が模索されている。このことは大変重要なことであり、各地の関係者のみなさんの努力を多としたい。しかし、一方で医療機関や介護施設での受け入れ能力が十分でないことが連携を滞らせる大きな要因にもなっている。たとえば、身体合併症治療が必要な認知症患者が地域の中で発生した場合でも、一般病院では管理面から認知症、なかでもBPSD患者の入院治療受け入れが困難であることが多くなっているのが実情だ。したがって、認知症疾患医療センターのような専門医療機関内の認知症BPSD及び身体合併症診療能力を上げることで、患者受け入れ能力を向上させることも、間接的に地域連携を促進する重要な要素であると考える（表2）。認知症患者の受け入れ能力を改善するためには、院内に認知症入院治療支援体制を構築することが必要である[3]。

国立長寿医療研究センターでは、入院に関しては精神科病床を持たないため、重度のBPSD例に関しては近隣の協力病院にお願いすることになっているが、身体合併症を有する認知症例の治療のために、軽度から中等度レベルのBPSDにも対応できる病棟を開設した。ここでは、肺炎急性期、大腿骨頸部骨折術後などでADL改善、リハビリテーションを必要とするにもかかわらず、認知症のために急性期病棟では十分な治療、看護ができない患者（このような例はきわめて多い）の治療継続を身体、精神両面から行う。治療にあたっては現疾患の主科医師とともに、老年科、神経内科、精神科といった認知症専門の医師が担当副科として加わることで主科医師の負担を軽減する。さらに、認知症認定看護師を配置してケアの充実も図る。

さらに、呼吸器疾患、整形外科疾患などの病棟において治療中の認知症患者の評価、対応をサポートするための院内回診チーム（Dementia Support Team：DST）を立ち上げた。これは、認知症専門医、認知症認定看護師、臨床心理士、精神保健福祉士がチームをつくり、院内を回診して、各病棟における認知症患者の問題についてアドバイスし、必要に応じて、認知症身体合併症治療病棟への転棟適応の判定を行う。このような試みは他施設でも始められている[4]。認知症身体合併症治療病棟の開設およびDSTの立ち上げにより、認知症患者の一般病棟での受け入れが改善し、地域連携に貢献することが期待される。

表2　認知症専門医療機関による地域連携の2つの型

直接的連携
地域連携パスの使用、研修会などによる相互交流などにより、患者の転院、紹介などを円滑に行うことをめざす。

間接的連携
専門医療機関内の認知症BPSD及び身体合併症診療能力を上げることで、患者受け入れ能力を向上させる。院内に認知症入院治療支援体制を構築することが必要である。

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Geriatr Gerontol Int 2011; **11:** *383–394*

COMMISSION REPORT

Guidelines for non-medical care providers to manage the first steps of emergency triage of elderly evacuees

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On 11 March 2011, a strong earthquake occurred off of Japan's Pacific coast and hit northeastern Japan. The earthquake was followed by huge tsunamis, which destroyed many coastal cities. As a result, the Study Group on Guidelines for the First Steps and Emergency Triage to Manage Elderly Evacuees quickly established guidelines enabling non-medical care providers (e.g. volunteer, helpers, and family members taking care of elderly relatives), public health nurses, or certified social workers to rapidly detect illnesses in elderly evacuees, and 20 000 booklets were distributed to care providers in Iwate, Miyagi, and Fukushima prefectures. The aim of this publication is to reduce susceptibility to disaster-related illnesses (i.e. infectious diseases, exacerbation of underlying illnesses, and mental stress) and deaths in elderly evacuees. **Geriatr Gerontol Int 2011; 11: 383–394.**

Keywords: earthquake, elderly evacuee, emergency triage, guidelines, non-medical care provider.

Background

Japanese people have already experienced a variety of natural disasters including earthquakes,[1] typhoons,[2] tsunamis,[3] and others. It is very important to manage the medical care of elderly evacuees in the wake of disasters because: (i) elderly subjects (especially those needing to live in shelters) may suffer excessive mental and/or physical stress under the altered environment; and (ii) it is difficult to maintain medical management of chronic illnesses (e.g. hypertension, diabetes mellitus, cerebrovascular or cardiac disease) when care has already been started at local medical institutions. It was reported that acute risk factors possibly triggered cardiovascular events in hypertensive elderly patients after the Hanshin-Awaji earthquake.[4] Increased incidence of transient left ventricular apical ballooning (takotsubo cardiomyopathy) was also described after the Mid Niigata Prefecture Earthquake of 2004.[5]

In April 2010, the Study Group on "Guidelines for the First Steps and Emergency Triage to Manage Elderly

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Authors' contributions: Shigeto Morimoto and Takashi Takahashi contributed to the study concept and design. Masafumi Kuzuya, Hideyuki Hattori, and Koichi Yokono performed acquisition of data. Katsuya Iijima and Shigeto Morimoto analyzed and interpreted the data. Takashi Takahashi and Shigeto Morimoto prepared the manuscript.

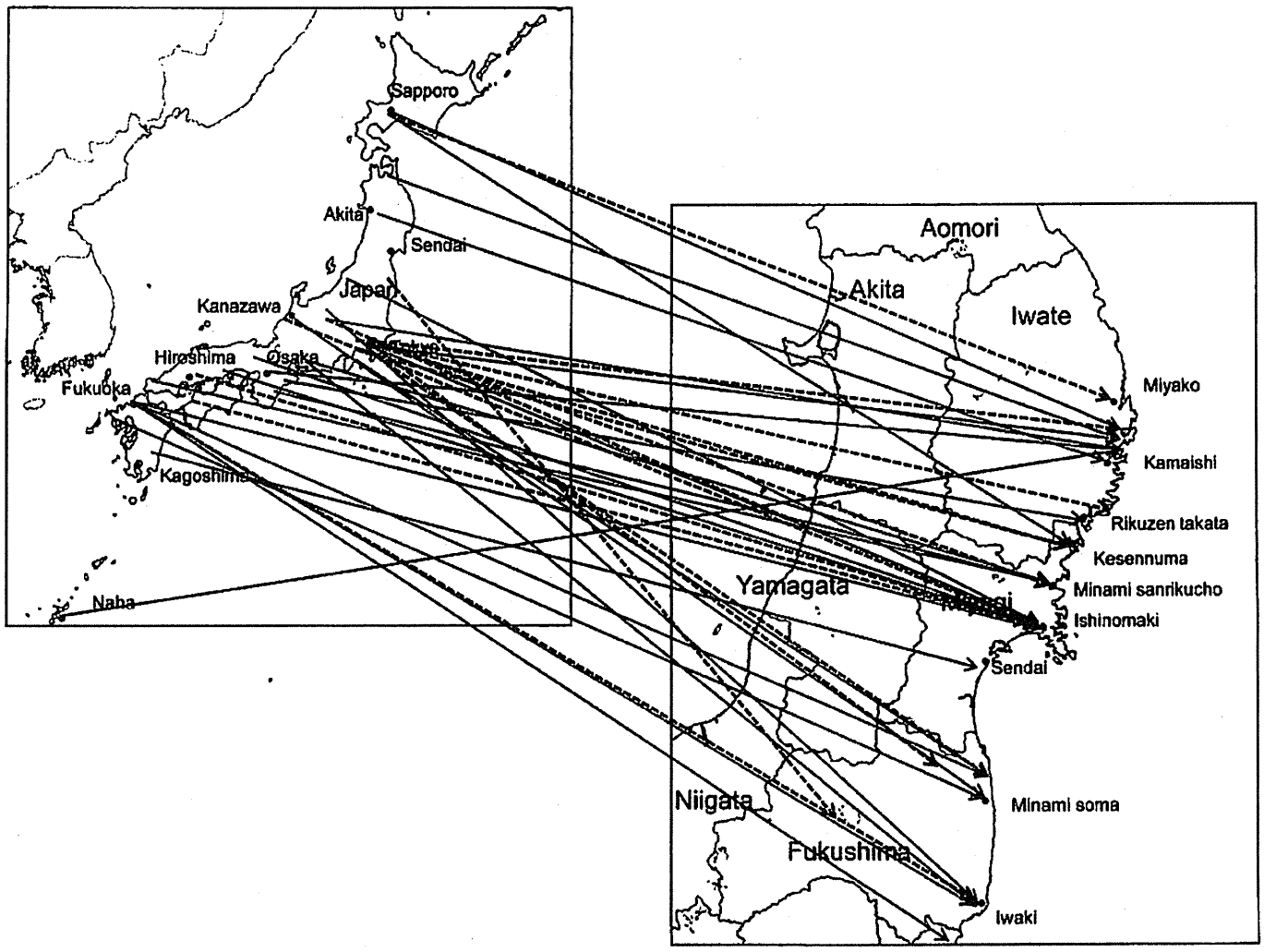

Figure 1 One week after the 2011 Tohoku earthquake, 20 000 booklets for non-medical care providers were distributed by members of the Japan Geriatrics Society (dotted lines) and Japan Medical Association Team (straight lines), to evacuation centers located in Iwate, Miyagi, and Fukushima prefectures.

Evacuees" was formed, with funding from Japan's Ministry of Health, Labour and Welfare, to conduct comprehensive research on aging and health. The study group aimed to complete and revise the guidelines based on external reviews by expert medical doctors by March 2012.

By collaborating with the Japan Geriatrics Society after the 2011 earthquake off the Pacific coast of Tohoku, we have quickly published two tentative guidelines to manage elderly evacuees: one for medical care providers and another for non-medical care providers (NMCP), including volunteer, helpers, and family members who are taking care of the elderly, public health nurses (PHN), or certified social workers (CSW). A total of 20 000 guideline booklets have been distributed by members of the Japan Geriatrics Society and the Japan Medical Association Team to NMCP, PHN, or CSW working in Iwate, Miyagi, and Fukushima prefectures (Fig. 1). The Japan Medical Association Team's mission is to provide medical assistance at hospitals or clinics in disaster-affected areas and to provide ongoing medical treatment that was started before the disaster.[6]

Preface

The guidelines for NMCP, PHN, and CSW have three chapters: (i) Features and prevention of critical diseases in elderly in evacuation areas; (ii) Signs of acute diseases in elderly; and (iii) Symptoms of anxiety in elderly in shelters. Ideally, NMCP, PHN, or CSW will use the booklets to rapidly detect illnesses in the elderly in shelters or homes. NMCP, PHN, or CSW should immediately inform attending medical staff when those with the signs or symptoms are detected.

Guidelines

I. Features and prevention of critical diseases in elderly in evacuation areas

1-1). Heart attack. This condition includes angina pectoris, myocardial infarction, and other illnesses due to myocardial ischemia, a lack of blood flow in arteries.

Signs and symptoms of a heart attack

Location of symptoms	Central chest to left side of chest
	Apart from chest discomfort, anginal pain in the upper central abdomen, back, neck, jaw, or shoulders
Detailed symptoms	Worsening ("crescendo") chest pain, specifically crushing, burning, or choking sensation
	Onset of severe oppression or worsening oppression
Duration of symptoms	Infrequent or lasting less than 10 min
	Lasting more than 15 min, suggesting unstable condition

Note: Caution is needed because silent or mild symptoms frequently occur in the elderly, especially in those with diabetes. In addition, elderly people sometimes present with atypical symptoms, including breathlessness, nausea, discomfort in the upper central abdomen, or burping.

Measures to prevent heart attack in shelters

- NMCP, PHN, or CSW should be aware of elderly who normally take medication for cardiac disease and/or hypertension.
- NMCP, PHN, or CSW should check on the elderly.
- NMCP, PHN, or CSW should ensure that the elderly drink plenty of fluid, including water, to prevent dehydration. They should also advise that the elderly consume a low-salt diet and not smoke.
- If the elderly have any of the above symptoms, medical staff should be alerted.

Tips to treat cardiopulmonary arrest in shelters

- NMCP, PHN, or CSW should perform CPR, pushing the central chest strongly and quickly (100 times per minute) and alert medical staff immediately.

1-2). Hypertension. Awareness of blood pressure (BP) and its variability in the elderly is necessary because they may have excessive mental and/or physical stress, especially if in an emergency evacuation area or first-aid station, relative to their day-to-day lives before the disaster.

Measures to deal with elderly receiving antihypertensive drugs

- First, elderly people who are usually prescribed antihypertensive drugs should be reported to medical staff. NMCP, PHN, or CSW should check on the elderly.
- Elderly people who have been diagnosed as hypertensive should also be checked by medical staff, NMCP, PHN, or CSW.
- BP should be measured frequently. If possible, it is better to measure it daily using an automatic BP machine. In high-risk patients, it is recommended that BP be measured in both the morning and evening.
- If the elderly person's medication is not known because the prescription record is lost, a doctor or medical staff should be consulted.
- If an elderly person has a headache, palpitations, chest symptoms, and/or flushing, BP should be measured immediately and medical staff consulted.
- No smoking and a low-salt diet are also recommended. Endeavors must be made to ensure the elderly maintain physical activity (e.g. any exercise for at least 30 minutes a day).

2. Stroke/cerebrovascular disease (CVD)

Cerebrovascular accidents occur suddenly due to a disturbance in the blood supply to the brain and lead to a loss of cerebral function.

Signs and symptoms of stroke/CVD

If elderly people have any of the following symptoms, it is possible that they may have suffered a stroke/CVD. Consult medical staff immediately, because these situations may become medical emergencies.

- Symptoms starting suddenly and lasting from a few seconds to minutes
- Headache (mild to severe)
- Vertigo and/or dizziness (with nausea/vomiting on occasion)
- Disturbance of consciousness (snoring-like breathing, semiconscious state/coma)
- Motor disturbance including hemiparesis/hemiplegia/numbness, exhaustion, muscle weakness of the face (central facial palsy), drooling from one corner of the mouth, eyelid drooping (ptosis)
- Aphasia (difficulty with verbal expression, auditory comprehension)
- Sensory or vibratory disturbance (on one side)
- Visual field defect/hemianopia, double vision/polyopia
- Loss of balance when sitting, standing, or walking; loss of coordination.

Measures to prevent stroke/CVD in shelters

- First, medical staff and people around should be aware of elderly people who usually take medication for atherosclerotic diseases and/or lifestyle-related diseases (e.g. hypertension, diabetes, dyslipidemia, and cardiac diseases including atrial fibrillation).
- Also, people around should check on the elderly.

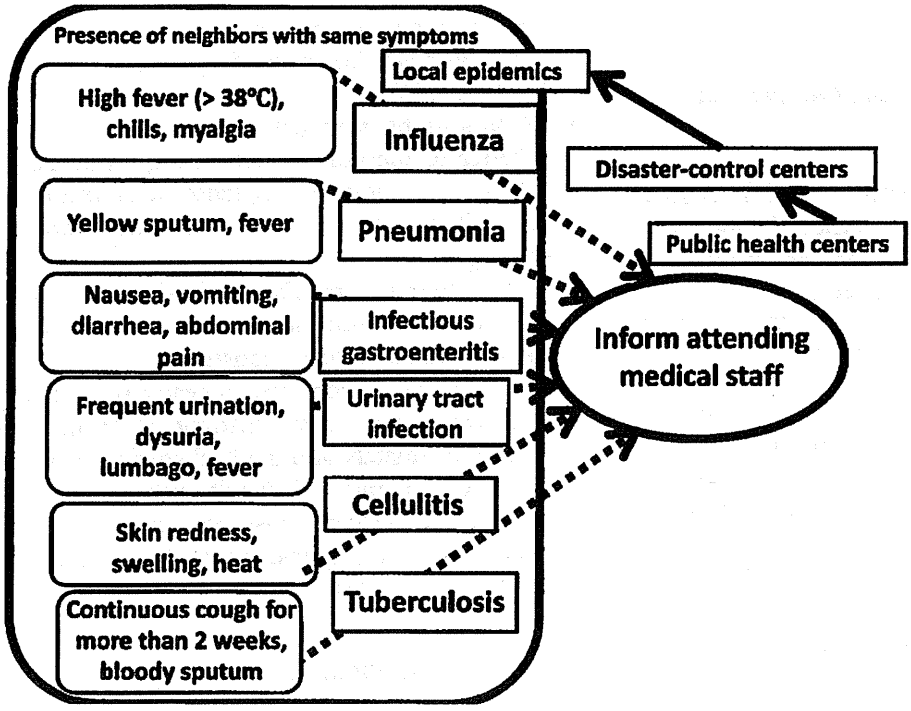

Figure 2 Measures to rapidly detect infectious diseases.

- Continue usual drugs including anticoagulation drugs if possible.
- In cases of unidentified medical conditions because of loss of an elderly person's prescription record, medical staff should be consulted.
- Anticoagulation drugs are generally essential. However, it is better to consult medical staff because it is necessary to check for external wounds or bleeding from the gastrointestinal tract, including stress-induced ulcer.
- CVD is strongly associated with hypertension. Measure BP regularly.
- No smoking is strongly recommended.
- Drink any fluid, including a lot of water, to prevent dehydration.
- A low-salt diet is strongly recommended. Endeavor to take dietary fiber in vegetables including seaweed and mushrooms.
- Endeavor to do any type of exercise or walk for at least 30 minutes a day regularly.
- Prevent constipation.
- Be careful about changes in temperature, especially in winter.

3. Infectious diseases

Signs and symptoms of infectious diseases

It is useful to have information on epidemics of infectious diseases in stricken areas before and after disasters, in order to quickly detect illness. In particular, this measure is beneficial for diseases, such as influenza, food poisoning and viral gastroenteritis, with a short incubation time from infection to the onset of symptoms (i.e. several hours up to 3 days). Pay special attention to elderly persons with these symptoms and immediately inform medical staff if there is suspicion that an elderly person has such an illness. In relation to this point, it is important to collect epidemiological information from district public health centers through disaster-control centers (Fig. 2).

In fact, many evacuees in shelters developed vomiting and diarrhea after the 2007 Noto Peninsula Earthquake. It was possible to immediately predict an outbreak of norovirus gastroenteritis among evacuees since a local epidemic of this infectious disease had already been observed in the Noto area before the quake.

However, local epidemics are not always useful for detecting infectious diseases, particularly those with a long incubation period (i.e. several months up to 2 years) such as pulmonary tuberculosis.

Measures to prevent transmission of infectious agents in shelters

- The environment in shelters induces an increased risk for outbreaks of infectious diseases because many evacuees are living together in a very limited space.
- It is very important to wash hands and gargle as standard precautions. Please apply hand disinfectant when it is not possible to use water. It is essential to wash hands or use hand disinfectant after using the toilet.
- NMCP, PHN, or CSW should not directly touch human bodily fluids (e.g. blood, urine, feces, nasal discharge, and sputum) with their hands because the fluids may include infectious microorganisms.

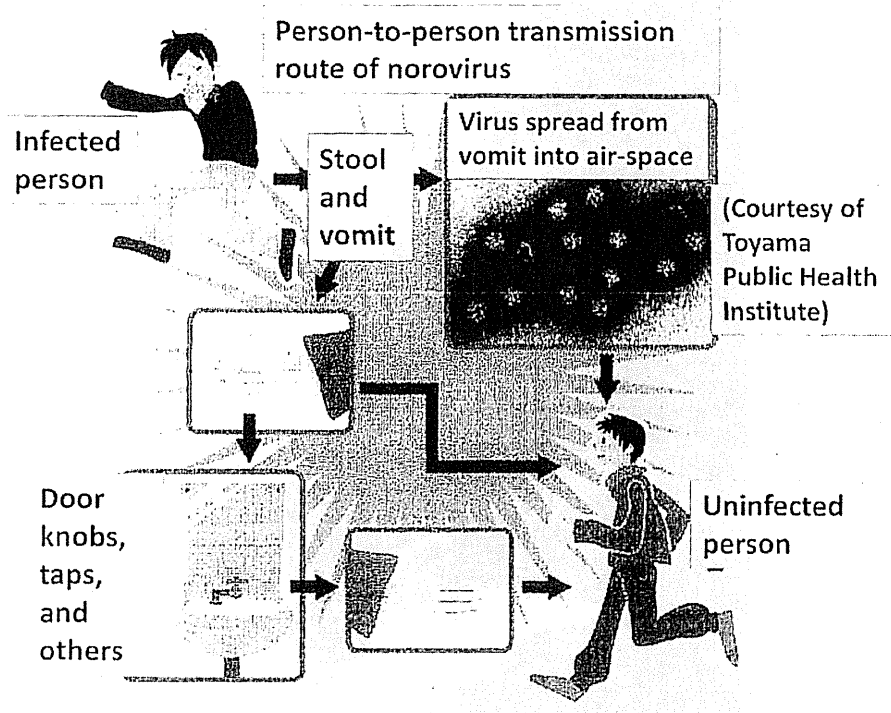

Figure 3 Person-to-person transmission route of norovirus.

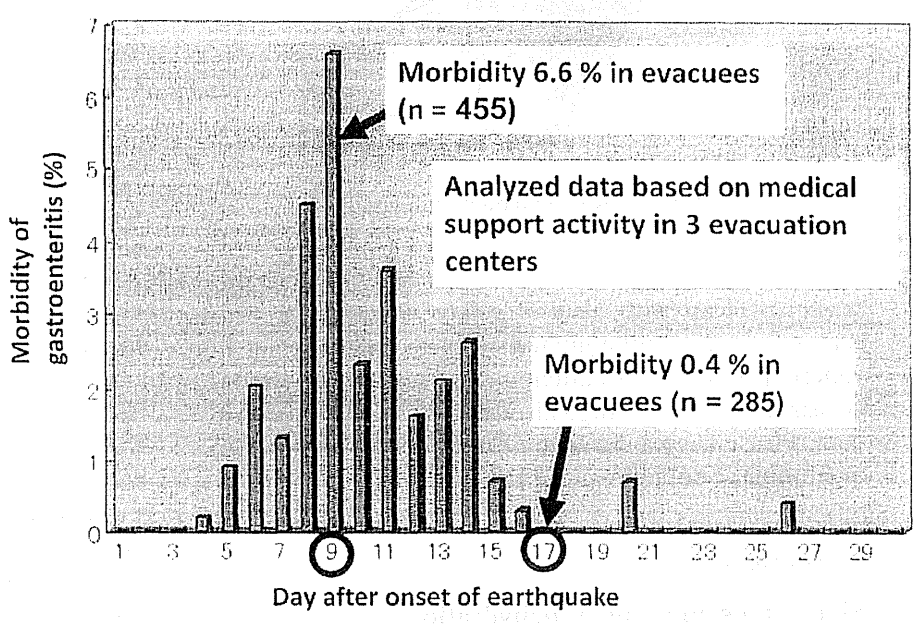

Figure 4 Morbidity of gastroenteritis in evacuees in shelters after the 2007 Noto Peninsula Earthquake.

If NMCP, PHN, or CSW are aware that the environment (floors in shelters, portable toilets, and temporary water-suppliers) has been contaminated with vomitus or diarrheal matter, contact medical staff. Do not clean the contaminated environment yourself. The staff can deal with this using 0.1% sodium hypochlorite disinfectant.

- Norovirus can spread via person-to-person transmission and lead to gastroenteritis outbreaks (Fig. 3).[7] However, it is unnecessary to isolate subjects with gastroenteritis from the stricken areas. The outbreak in shelters after the Noto quake was quelled after one week of interventions including personal hand hygiene, gargling, and the use of disinfectant on environmental surfaces (Fig. 4).[8]

In addition, respiratory hygiene (cough etiquette) is recommended to prevent respiratory infections.[9] With respect to coughing, rhinorrhea, sneezing, and sputum, please instruct evacuees to behave as follows: (i) use a tissue to cover your mouth and nose when you cough or sneeze (Fig. 5); (ii) drop used tissuew in a special waste basket; and (iii) wash your hands with soap and warm

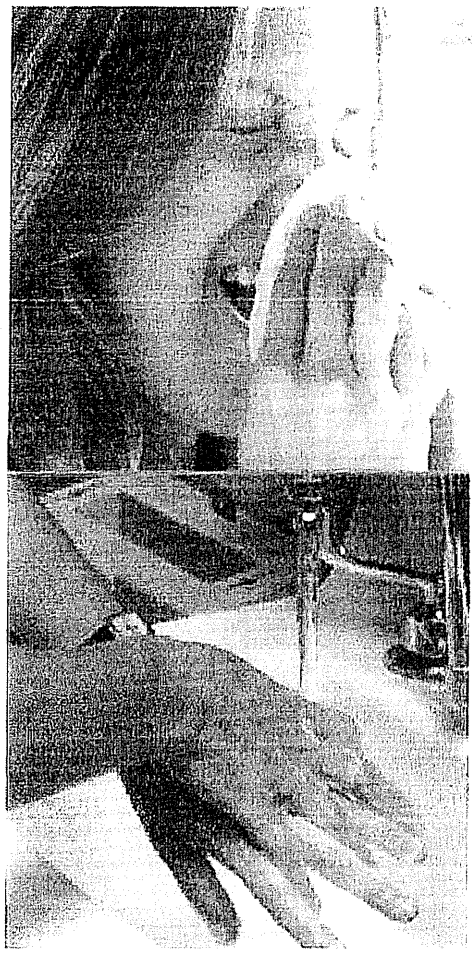

Figure 5 Respiratory hygiene (cough etiquette).

water or clean with alcohol gel or wipes since your hands may be contaminated with secretions (Fig. 5). Elderly people who frequently cough or sneeze should be asked to wear a surgical mask provided by medical staff. Please keep a distance of more than 1 m between symptomatic subjects and others.

4. Dehydration

Signs and symptoms of dehydration

If an elderly person has some of the more severe symptoms of dehydration listed below, call medical staff immediately.

- Muscle weakness
- Physical fatigue
- Increased body temperature
- Decreased urine production
- Dry skin, even under the armpits.

Measures to prevent dehydration in shelters

- When elderly people feel thirsty, they are already dehydrated, so do not restrict water intake.
- To prevent dehydration, an elderly person without particular illness such as heart failure or kidney failure simply needs to replenish fluids with at least one liter of water per day.
- When elderly people have any of the risks for dehydration listed in Table 1, they should be carefully assessed by a doctor for dehydration.

Table 1 Risks for dehydration in the elderly

Inability to feed oneself
Appetite loss (decrease in food intake)
Swallowing problems
Diarrhea or vomiting
Thirsty or dry mouth
Taking a diuretic
Increased body temperature
Decreased urination
No air conditioning/not using air conditioning
Limitation of water intake to avoid frequent urination

5. Malnutrition

Signs and symptoms of malnutrition

When an elderly person has any of the risks for malnutrition listed below, the person should be carefully assessed by medical staff.

- Consumed less than half the usual dietary intake for at least 1 week
- Diarrhea or vomiting for more than 2 or 3 days
- Decrease in body weight of more than 5% for 2 weeks
- Insufficient intake or dysphagia due to inadequate food
- Receiving enteral or parenteral nutrition.

Measures to prevent malnutrition in shelters

The following general precautions to prevent malnutrition should be considered:

- Adequate food supply
- Adequate types of food consumed
- Adequate feeding assistance
- Dental issues such as gum disease, cavities, and poorly fitting dentures
- Regular assessment of nutritional status and weight loss.

6. Gastrointestinal disorders

Signs and symptoms of gastrointestinal disorders

When elderly evacuees have any of the signs and symptoms of gastrointestinal disorders listed below, they should be carefully assessed by medical staff.

- Upper central abdominal pain after meals (on suspicion of stomach ulcer)
- Upper central abdominal pain when hungry (on suspicion of duodenal ulcer)
- Gastric discomfort

- Appetite loss
- Heartburn
- Tarry (black) stool or blood in the stool.

Measures to prevent gastrointestinal disorders in shelters

The following general precautions to prevent gastrointestinal disorders should be considered:

- Avoid psychological stress.
- Eat substantial meals at regular mealtimes.
- Wash hands, gargle, and disinfect cooking utensils to prevent infectious enteritis.
- Flush or discard any vomit, and change diapers with rubber gloves while wearing a flu mask. Thoroughly clean and disinfect contaminated surfaces with a bleach-based household cleaner immediately after an episode of illness.
- Drink sufficient liquid and take a lot of exercise to avoid constipation.
- Do not ignore the urge to defecate and maintain a regular bowel habit.

7. *Diabetes mellitus (DM)*

7–1). *Hyperglycemia*

Signs and symptoms of exacerbation of DM

If elderly people have any of the symptoms described below, their DM might be worsening. Please contact medical staff if any of the following symptoms are detected:

- Frequent urination
- Increasing incontinence
- Thirst
- Fatigue
- Not looking well.

Measures to prevent exacerbation of DM in shelters

- Eat meals regularly and take medication with meals.
- Patients with DM type 1 should not skip basal insulin injections.
- Drink enough water to prevent dehydration.
- If someone has a fever or little appetite, monitor blood glucose more frequently than usual or consult a doctor promptly.

7–2). Hypoglycemia. In addition, if elderly evacuees are taking hypoglycemic medication, be alert for symptoms of hypoglycemia.

Signs and symptoms of hypoglycemia

The symptoms described below might be caused by hypoglycemia. Please contact medical staff if any of the following symptoms are detected:

- Strong feeling of hunger
- Cold sweats
- Palpitations
- Weakness
- Sleepiness
- Slurred speech
- Blurred vision
- Convulsion.

Measures to prevent hypoglycemia in shelters

- Elderly people should avoid exercise or working when hungry.
- Eat meals regularly.
- Eat carbohydrates (e.g. rice, bread, noodles, or potatoes).
- If people cannot eat a meal, they should reduce or skip their hypoglycemic medication.
- Set a higher goal of glucose control (150–200 mg/dL) than usual.

Tips to treat hypoglycemia in shelters

- NMCP, PHN, or CSW should ask those with the above symptoms to take a glucose tablet.

8. *Bronchial asthma*

Signs and symptoms of exacerbation of bronchial asthma

If elderly people have any of the following symptoms, bronchial asthma might be worsening. Please contact medical staff if the following symptoms are detected:

- Paroxysmal wheezing or coughing, or reoccurrence of these symptoms
- Breathlessness during the night
- Breathlessness when moving, speaking, or lying down
- Cyanosis or edema
- Drowsiness.

Measures to prevent exacerbation of bronchial asthma in shelters

- Let NMCP, PHN, CSW, or medical staff know that if an elderly person is taking medication.
- Continue taking medicine.
- Wash your hands and gargle regularly, wear a mask if available, and be careful about infectious diseases such as colds.
- Keep warm.

9. *Chronic obstructive pulmonary disease (COPD)*

Signs and symptoms of exacerbation of COPD

If an elderly person has any of the following symptoms, COPD might be worsening. Please contact medical staff if the following symptoms are detected:

- Increased respiratory rate and shortness of breath
- Worsening of dyspnea on exertion or at rest
- Increased frequency or severity of cough and excessive sputum production
- Mucopurulent sputum (change in sputum character)
- Cyanosis or edema
- Drowsiness.

Measures to prevent exacerbation of COPD in shelters

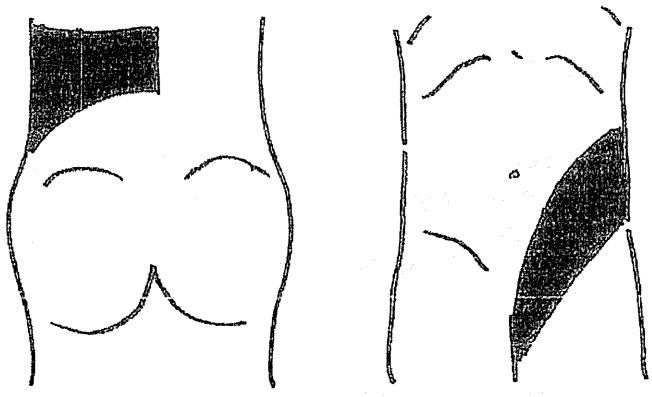

Figure 6 Ares where pain occurs due to urinary tract diseases.

- Let NMCP, PHN, CSW, or medical staff know if an elderly person is taking medication.
- Continue taking medication and inhaling bronchodilators.
- Avoid exposure to smoke and dust.
- Try to wash your hands and gargle regularly.
- Keep warm and do not stay in the cold.

10. Chronic kidney disease (CKD)

Signs and symptoms of CKD

If elderly evacuees have any of the following symptoms, CKD might be worsening. Please contact medical staff if the following symptoms are detected:

- Inactivity, fatigue, or weakness
- Edema
- Appetite loss
- Nausea and/or vomiting
- Pruritus.

Measures to prevent CKD in shelters

- Let NMCP, PHN, CSW, or medical staff know if an elderly person is taking medication.
- Continue taking medicine.
- Have regular blood pressure checks.
- Restrict salt intake.
- Drink enough water to prevent dehydration.
- Keep warm.
- Be careful about infectious diseases such as colds.

11. Urinary diseases

Signs and symptoms of urinary diseases

If an elderly person experiences some of the more severe symptoms of urinary diseases listed below, call medical staff immediately.

- Pain on urination
- Lower abdominal pain (Fig. 6)
- Back pain, lumbago (Fig. 6)
- No urination for half a day or longer
- Distention of lower abdomen
- Bloody urine
- Cloudy smelly urine
- Frequent urination
- Incontinence
- High fever (in cases of pyelonephritis, 38°C or higher)
- Limiting water intake in order to avoid frequent urination or incontinence.

Measures to prevent urinary diseases in shelters

- Replenish fluids with at least one liter of water per day in persons without particular illness such as heart failure or kidney failure.
- Do not avoid going to the toilet.

12. Post-traumatic stress disorder (PTSD)

Signs and symptoms of PTSD

Please contact medical staff if an elderly person has any of the following symptoms. Please contact medical staff if the following signs are detected:

- Sudden change in personality
- Absent-mindedness and the inability to respond quickly
- Restlessness
- Frequent hyperventilation
- Frequent palpitations
- Panic attacks.

Measures to prevent PTSD in shelters

- If elderly people feel distressed or pain, they should confide in someone (a medical staff member, NMCP, PHN, or CSW).
- It may be necessary for the elderly to take medication if they cannot sleep or feel distressed and there is no alternative.

13. Depression

Signs and symptoms of depression

It is not unusual for an elderly person to experience grief after suffering from severe stress. Please contact a medical staff member if the following symptoms of depression are detected:

- Cannot help thinking of bad things
- Not knowing what to do despite actually having many things to do
- Feeling too sluggish to move, although the results of a medical checkup and blood tests are normal
- Unable to sleep at night
- Always thinking of dying.

Measures to prevent depression in shelters

- It is important to maintain a routine, including waking up and going to sleep at the same time daily.
- If elderly people feel distressed or pain, they should confide in someone (a medical staff member, NMCP, PHN, or CSW).

- It may be necessary for the elderly to take medication if they cannot sleep or feel distressed and there is no alternative.
- If an elderly person has been attending a clinic for the treatment of depression, please tell a medical staff member. It is important that the person continues to receive treatment.

14. Behavioral and psychological symptoms of dementia (BPSD)

Signs and symptoms of BPSD

Please contact a medical staff member if the following symptoms of dementia are detected:

- Restlessness and speaking in a disjointed manner
- Paranoid or having delusions (e.g. a false idea of being robbed)
- Becoming angry or starting to cry suddenly.

Measures to prevent BPSD in shelters

- Create an environment in which dementia patients can spend time with familiar people.
- Prepare a quiet environment so that dementia patients can get adequate sleep at night.
- Preparations should be made so that a dementia patient can be transferred to a professional medical institute when psychological symptoms or behavioral abnormality is observed.

15. Delirium

Signs and symptoms of delirium

Please contact medical staff if any of the following physical symptoms are detected in elderly persons who had previously been well and not experienced any decrease in cognitive function:

- Speaking or behaving in an erratic manner
- Absent-mindedness or being distracted
- Emotional instability (e.g. becoming angry, starting to cry, or getting excited suddenly).

Measures to prevent delirium in shelters

- Particular attention should be paid to dehydration, infections, and other underlying physical disorders, which can cause delirium in the elderly. Please be aware that elderly people with physical disorders are potential delirium patients.
- Keeping the elderly company and talking to them to provide stimulation are effective for preventing lethargy during the daytime. At night, create a quiet environment to help them achieve a regular sleeping pattern.

16. Dental diseases

Signs and symptoms of dental diseases

If an elderly person is showing some of the more severe symptoms of dental disease listed below, call medical staff immediately.

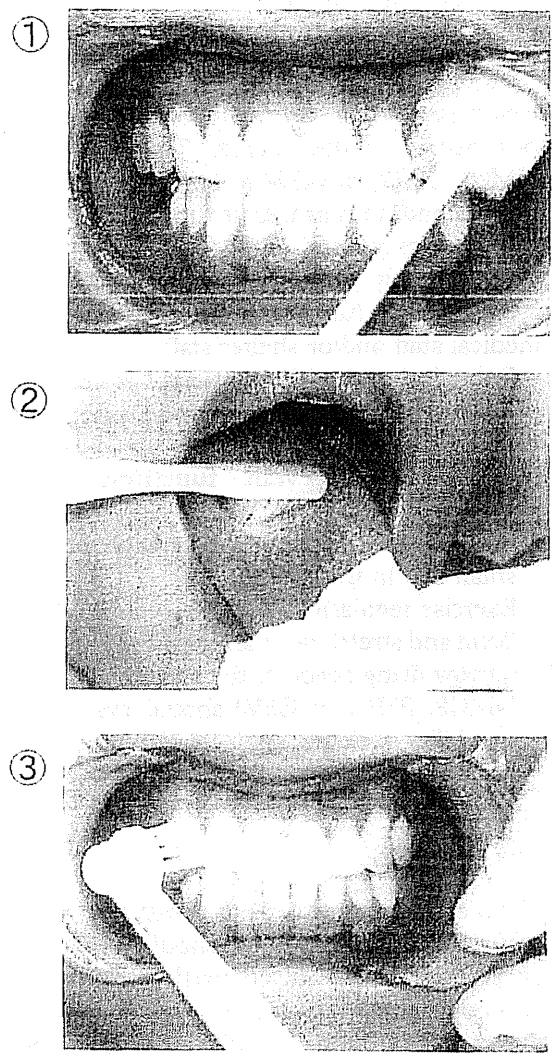

Figure 7 Systematic oral care program.

- Pain from dental caries
- Swelling and bleeding of the gingival
- Severe halitosis
- Fur on the tongue.

Measures to prevent dental diseases in shelters

- Keep cleaning the mouth.
- Brush the teeth every day.
- Those who are unable to do the above independently need to receive a systematic oral care program (Fig. 7)[10]
  1. Remove oral-mucosal and gingival saburra by using an oral care sponge for one minute.
  2. Remove fur from the tongue with a tongue brush for half a minute.
  3. Remove bacterial flora from the tooth surface with an electric toothbrush for 2.5 minutes, if an electric power supply is available.
  4. Rinse the mouth for 1 minute.

17. Functional inactivity

Signs and symptoms of functional inactivity

Elderly people often may not complain of their subjective symptoms accurately, or they may not be aware of a decline in their health. Thus, it is important for NMCP, PHN, or CSW to be aware of elderly persons' health conditions as well as the whereabouts of subjects who require support and/or nursing care.

If an elderly person shows some of the more severe symptoms of functional inactivity listed below, call medical staff and/or shelter staff.

- Being isolated, with no attempt to communicate
- Narrow range of activities and staying indoors
- Lying down all day long

Measures to prevent functional inactivity in shelters

- Encourage subjects to greet each other and make small talk in the shelter.
- Exercise regularly.
- Bend and stretch your arms and legs often, even in the narrow living space in the shelter.
- NMCP, PHN, or CSW should evaluate the reserve capability of elderly subjects with functional inactivity promptly.

18. Decubitus

Signs and symptoms of decubitus

NMCP, PHN, or CSW should actively survey the onset of decubitus ulcer, particularly on the hip, the backbone, the heel, and the back of the head, in bedridden subjects. Since this illness needs long-term management, contact medical staff and arrange transport to the hospital.

Measures to prevent decubitus in shelters

- Change bedridden subjects' position every 2 hours a day.
- Keep the skin clean.

19. Heat stroke

Signs and symptoms of heat stroke

In summer, pay special attention to heat stroke in elderly people in shelters. The main features are hot skin (body temperature ≥ 40°C) without sweat and drowsiness. Call medical staff immediately as this condition will cause fatality.

Measures to prevent heat stroke in shelters

- Keep cooling the neck or under the arms.
- Do not restrict water intake.

II. Signs of acute diseases in elderly

If any of the following symptoms is encountered in the elderly, they may be severely ill due to acute disease. These signs of acute diseases are sensitive enough to rapidly detect a severe state in elderly evacuees. NMCP, PHN, or CSW should consult attending medical staff immediately. Asterisks denote signs indicating the need for emergency transport.

1. Disturbance of Consciousness (Japan Coma Scale [JCS] Scoring)

- Rousable by being spoken to but reverts to previous state if stimulus stops (JCS II-10)
- Rousable with loud voice but reverts to previous state if stimulus stops (JCS II-20)
- Rousable only by repeated mechanical stimuli (JCS II-30)

* Unrousable using any forceful stimuli but responds to avoid the stimuli (JCS III-100 to III-300).

2. Shock

* Anemia (e.g. pallor of lips and/or nails)
* Bleeding due to external injuries
* Disturbance of consciousness (JCS III-100 to III-300)

- Abnormal skin turgor, a physical sign of dehydration
- Dry tongue

* A decline in BP: systolic BP < 90 mmHg
* An increase or decrease in pulse rate (i.e. resting pulse rate of more than 120 beats/minute or less than 50 beats /minute).

3. Dyspnea

- Shallow and rapid respiration, puffing (shallow breathing)
- Shoulder breathing (accessory muscle use)
- Flaring of wings of the nose and dilated nostrils (nasal alar breathing)
- Violet color to lips and nails (cyanosis)
- Wheezing or whistling while breathing (wheeze/stridor)
- Sleeping with the upper body raised in order to breathe (orthopnea)
- Weak breathing, suspended on occasion (apnea)
- Pursing the lips when exhaling (pursed lips breathing)

* Collapse of supraclavicular or intercostal spaces when inhaling (inspiratory retraction)
* Distension of the abdomen/shrinking of the chest when inhaling, and shrinking of the abdomen/ distension of the chest when exhaling (seesaw breathing)
* Obvious asymmetric movement of the chest during respiration
* Respiratory rate less than 10/minute or more than 30/minute.

4. Acute abdomen

* Uncontrollable abdominal pain