



## ANALYSIS

## Tackling hearing loss to improve the care of older adults

Many older adults have difficulty understanding speech in acute healthcare settings owing to hearing loss, but the effect on patient care is often overlooked, argue **Jan Blustein and colleagues**

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### Key messages

Many healthcare settings are difficult listening situations, with beeping alarms, competing conversations, and poor sound insulation

Communication is key for healthcare quality and safety, so people with hearing loss are at risk of receiving poor care

Clinicians should be aware that older patients might have trouble understanding speech and should use established strategies to improve communication

Hospitals might be able to provide hearing assistive devices and could routinely screen older patients for hearing loss

The World Health Organization estimates that disabling hearing loss affects nearly a third (32.8%) of people aged 65 years and over around the world.<sup>1</sup> The prevalence of hearing loss is growing; it is now the fourth leading cause of years lived with disability globally.<sup>2</sup>

But the implications tend to be overlooked. Clinical care is often delivered in settings where people with hearing loss struggle to understand speech. Communication is key for healthcare quality and safety, so people with hearing loss are at risk of receiving poor care. Simple steps can improve communication in clinical encounters. Changes in practice environments, processes, and policies could substantially improve the quality of medical care. But first, we need greater awareness.

### Difficult listening situations

Typically hearing loss isn't a problem of hearing sounds, but rather of understanding speech. People with mild to moderate presbycusis (age related hearing loss) can often detect sound well and have good speech understanding in ideal circumstances; for example, in rooms with little competing ambient noise, in conversation with one speaker who is facing them.

Understanding can decrease when the setting is less than ideal—when the speaker turns away, when there are multiple simultaneous speakers, or when ambient sound interferes. Comprehension can also break down when vocabulary or accents are unfamiliar. In these so called difficult listening situations, listeners work harder to extract meaning from speech sound. For people with hearing loss, comprehension may fail.

### Many healthcare settings are difficult listening situations

Many healthcare settings—especially acute care settings—are difficult listening situations. In wards and emergency departments, alarms are beeping, competing conversations are under way, and spaces often have poor sound insulation.<sup>3</sup> A study at a leading US teaching hospital found that the average background noise level in the emergency department was 60-69 dB,<sup>4</sup> which is challenging even for someone with normal hearing. Similarly high levels have been recorded in intensive care units and operating theatres.<sup>5,6</sup>

Research confirms that hospital noise disrupts communication. In one experiment, patients in hospital were presented with a laboratory task of understanding sentences spoken at a normal conversational volume.<sup>7</sup> Comprehension dropped dramatically when subjects were simultaneously presented with recorded hospital noise played at the local ambient level (64 dB). Understanding decreased for all subjects, but those with hearing loss fared especially poorly. When the recorded noise level was lowered (to 59 dB; an institutionally achievable level<sup>3</sup>), comprehension significantly improved.

### Older patients are having difficulty

Hearing difficulties are common in those aged over 60. ↓ shows the World Health Organization's classification of severity of

loss, from mild to profound, measured in decibels hearing loss.<sup>12</sup> It shows the typical effects on speech comprehension for a person who is not wearing a hearing aid or other assistive device.

↓ shows prevalence statistics for the US,<sup>8</sup> but rates are similar in the UK.<sup>13</sup> Hearing loss rises dramatically with age. The US data show that, among those aged 80 years and over, 81.48% (95% confidence interval 78.12 to 84.82) have a loss that is at least somewhat disabling; of those, more than half have a loss that is beyond “mild.” But in the broad population of people aged 60 and over, it is entirely typical (45.59%, 43.63 to 47.55) to have some degree of clinically significant hearing loss, meaning that speech comprehension is prone to fail in busy healthcare settings.

The encounters that older people with hearing loss have in hospitals and emergency departments are high stakes, where good outcomes depend on clear communication.

## Communication is key to ensuring healthcare quality and safety

Effective communication has been consistently linked to better health outcomes<sup>14</sup> and better quality and safety.<sup>15 16</sup> Although improving doctor-patient communication is a very active area of research, hearing loss has not featured prominently. A recent systematic review of studies on communication between older patients and their doctors found that hearing problems were not even mentioned in over 75% of the papers.<sup>17</sup> Only one study aimed to improve clinician-patient communication by improving hearing.<sup>18</sup>

## Hearing loss, communication, and healthcare quality

People with hearing loss are at risk of having poor communication with medical staff in hospitals,<sup>18 19</sup> nursing homes,<sup>20</sup> palliative care settings,<sup>21</sup> and in general practice.<sup>19</sup> Analysis of US national data found that people with hearing loss were less likely to give favourable ratings to communication with their doctors on a set of measures from the Consumer Assessment of Healthcare Providers and Systems, after adjusting for an array of sociodemographic and clinical factors.<sup>22</sup> Interviews with older adults have elucidated many problems that lead to mishearing or misinterpretation in healthcare settings, including excessive noise, multiple concurrent speakers, failure to speak face to face, unfamiliar accents, and new terminology.<sup>23</sup>

Hearing loss is associated with lower quality care. In the US national survey, people with hearing loss gave significantly lower ratings to their overall quality of care on a composite measure. But evidence linking hearing loss to specific outcomes is lacking. People aged 70 or over with hearing loss have more admissions to hospitals than those without hearing loss, again with adjustment for multiple factors.<sup>24</sup> But whether this is mediated by poor communication remains to be determined.

Hearing aids can improve comprehension, but for various reasons are often not worn by people with hearing loss. Those who do wear aids often leave them at home during hospital stays, because they are concerned that the aids will be lost. Simple, cheap hearing assistance devices can often help patients who are having difficult hearing. Personal amplifiers (such as Pocketalker, Mino, and Sonido Listener) consist of a small microphone, an amplifier, and wired headphones. These devices overcome the problem of speech in noise by feeding speech

directly into the listener’s ears while headphones muffle external sounds.

Clinical reports suggest that these hearing devices can facilitate communication in hospitals,<sup>18 25</sup> nursing homes,<sup>26</sup> palliative care,<sup>27</sup> and home care.<sup>28</sup> Only one study, conducted in 1999, has formally evaluated effectiveness among patients in hospital.<sup>18</sup> Patients provided with hearing devices were significantly less likely to rate their communication with their doctor as “poor” or “very poor” and were more likely to understand why they were taking their drugs. This low cost approach to improving communication in hospital has not been evaluated since. This is a promising area for future research.

## What can clinicians do?

### Change communication behaviour

Clinicians should be aware that older patients might be having trouble understanding speech. People with hearing loss may nod and smile even when they don’t understand. Those who respond inappropriately to words might have hearing loss rather than cognitive impairment. In speaking to patients, acknowledge that hearing can be difficult in healthcare settings. Ask, “How can I help you to hear?”<sup>29</sup>

Improve two-way communication by using established effective strategies. Get the patient’s attention before talking. Face the patient; don’t turn away and talk. Speak clearly but not too slowly; don’t exaggerate lip movements. If the patient doesn’t understand you, rephrase rather than repeat the same words. During group conversations, have participants speak in turn. These best practice strategies can be referenced in an online guide published by Action on Hearing Loss (formerly the Royal National Institute for the Deaf).<sup>30</sup>

### Offer devices to patients in need

Providing hearing aids is difficult in a busy clinical encounter, but hospital stockrooms might be able to provide hearing assistive devices. Availability and the specific models vary across institutions. Hearing assistance devices might also be known as “personal amplifiers” or “personal listeners.”

### Consider becoming an advocate for better institutional practices

Hospitals and practices could routinely screen older patients for hearing loss and document hearing status in the medical record. Staff could be trained and provided with resources to offer storage boxes for hearing aids, to encourage their wear in hospital. More steps for making change are described in Action on Hearing Loss’s toolkit *Caring for Older People with Hearing Loss*, which is available through [information@hearingloss.org.uk](mailto:information@hearingloss.org.uk).

## What’s in the future?

A widely publicised 2016 report by the National Academy of Sciences, Engineering and Medicine surveyed the field and identified public health, clinical, institutional, and policy responses that could substantially improve hearing among US adults.<sup>31</sup> In the UK, a priority setting partnership recently identified promising areas for research.<sup>32</sup> In summer 2017, the US Congress directed the Food and Drug Administration to create a new class of over-the-counter hearing aids, to make those devices more affordable.<sup>33</sup> The quality and safety of healthcare stand to greatly improve as awareness of hearing loss enters the medical mainstream.

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## Table

Table 1 | Hearing loss in people aged ≥60 years in the US

Clinical profile		Prevalence, % (95% CI) <sup>§‡</sup>				Estimated annual healthcare use (millions)	
Degree of loss*	Typical consequences for speech comprehension†	≥60	60-69	70-79	≥80	Acute care hospitalisations§	Emergency department visits¶
Mild (>25-40 dB HL)	Speech comprehension may be good in ideal situations; as the situation becomes more difficult, speech comprehension may decline	27.64 (24.68 to 30.59)	19.94 (15.03 to 24.84)	35.62 (31.03 to 40.22)	36.02 (32.03 to 40.01)	4.48	7.32
Moderate (>40-60 dB HL)	Speech comprehension will be challenging in ideal situations. As the situation becomes more difficult (or if the hearing loss is at the high end of this category) speech comprehension may be quite poor	15.04 (13.39 to 16.70)	5.85 (3.53 to 8.19)	15.83 (13.53 to 18.04)	37.92 (33.40 to 42.44)	2.44	3.98
Severe (>60-80 dB HL)	May not even hear voices, unless speech is loud. Listener is highly reliant on speech reading	2.59 (1.89 to 3.28)	0.76 (0.01 to 1.70)	2.86 (1.60 to 4.12)	6.97 (4.94 to 9.01)	0.42	0.69
Profound (>80 dB HL)	May perceive sound as vibrations. Listener is entirely reliant on speech reading	0.33 (0.01 to 0.90)	0.25 (0.01 to 0.75)	0.30 (0.02 to 0.59)	0.56 (0.01 to 1.10)	0.05	0.09
Overall (any degree of hearing loss)	Speech comprehension varies, but is likely to be limited in many acute care settings	45.59 (43.63 to 47.55)	26.80 (22.25 to 31.35)	54.61 (49.27 to 59.97)	81.48 (78.12 to 84.82)	7.39	12.09