

Resource Manual for Commissioning and Planning Services for SLCN

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CONTEXT

The aim of this section is to set out the context for this resource. This work forms part of a range of tools which can support leaders with service planning and delivery, in line with both government and local priorities.

It is essential for service providers to demonstrate quality and productivity and to:

- show value for money
- be able to provide a strong financial argument for the need to invest in services for people with speech, language, communication and swallowing needs
- demonstrate improvements in outcomes for individuals, families and society

Value for money is not about being the cheapest option but about delivering the most return (impact, best outcomes) for a given investment over time.

The key drivers for change to services include:

1. The broad context, which can be divided according to the following factors:

- **P**olitical and **L**egislative factors
- **E**conomic factors
- **S**ocial factors
- **T**echnological factors

2. The near or local context, including:

- Localised policies
- Addressing local needs
- Service provision
- Workforce
- The evidence base

THE BROAD CONTEXT (**MACRO-ENVIRONMENTAL ANALYSIS): FACTORS FROM THE WIDER WORLD**

The Macro-environmental analysis commonly takes the form of a PEST analysis:

Political and legislative factors
Economic factors
Social factors
Technological factors

Political and legislative drivers

Devolution has resulted in changes to the powers of the different institutions across the UK.

The government in power at Westminster maintains responsibility for policy and legislation in relation to key areas including: tax, benefits, foreign affairs, international development,

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trade and defence for the four countries of the UK. Government in Westminster is also responsible for health, social care and education in England, but these areas are devolved for Northern Ireland, Scotland and Wales.

As a result of devolution, each country of the UK may have different parties in power, with the possibility of increasing powers in the future. The impact of this is the diversification of policy and direction of travel.

Legislative drivers

The main areas of UK-wide legislation that are relevant include the following themes:
- Human Rights
- Disability Discrimination
- Equality

Though there is different local interpretation, these far-reaching legal instruments define the rights and responsibilities of people and those commissioning and providing services for them.

Public protection has also been strengthened through the introduction of registration of professionals, for example, through the Health Professions Council.

There is separate legislation relating to health, education and social services in each of the devolved administrations in England, Northern Ireland, Scotland and Wales.

Economic

The current challenging economic backdrop will have a significant impact on the financing of public services, with local planners and commissioners prioritising services which are value for money, evidence based and releasing cash through innovation.

Social

In order to plan and deliver services, it is essential to identify the demographic factors relevant to speech and language therapy (SLT) and the challenges that these bring.

- The population is aging: people are living longer.
- The birth rate is falling: most families are having fewer children
- The infant mortality rate is also falling, with more children surviving premature birth or health problems or injury in infancy.
- The urban population is growing.
- The proportion of the population in employment is falling.
- The proportion of the population with English as an additional language is increasing, particularly in urban areas.

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THE NEAR OR LOCAL CONTEXT

Localised policies

Central to the new reforms is the emphasis on local decision-making within a national framework. Across the four countries of the UK there are requirements to provide services to accord with local need and influence. In England there is a particular focus on increasing the range of potential providers (plurality of provision) with commissioners having a role to stimulate the market.

For each country, arrangements have been established to assess whether commissioners are achieving better health outcomes for the local population. Part of this process will be an assessment of how well commissioners are performing against specified competencies/indicators/targets. For example, in Northern Ireland these targets are based upon high-level outcomes linked to local strategies.

With the devolution of power to local levels, there is a focus on developing more robust accountability. There is an emphasis on joint working to support integrated commissioning, service planning and provision across health, social care and education.

There are different approaches to this development with different structures and commissioning and performance management arrangements being established across the UK. The dominant theme in strengthening accountability is “putting service users at the centre” with respect to:

- Access and self–referral
- User voice at strategic to operational to individual case management
- Population/local engagement
- Information and advice for users, parents/ carers
- Patient Rights
- Self management of conditions

Some localities will be commissioning or planning speech and language therapy services as a single service whilst others will be commissioning integrated services, cutting across traditional boundaries, with health services integrated with education or social services. In many areas, this has already happened for children's services.

It is recognised that, often, no single agency can deliver best outcomes for their service users by working in isolation. Joint commissioning is advocated wherever the meeting the needs of individuals requires contributions from a number of agencies.

Similarly, some service planners or commissioners will be organising services around disease groups, such as services for persons who have survived a stroke. In either case, it will be important for speech and language therapy managers to liaise with other services to ensure that SLT provision is incorporated in their service plans.

Special arrangements are in place for commissioning services for unusual, low incidence or costly interventions. Speech and language therapy managers should identify the specialist commissioning procedures that may be required for individuals requiring

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particular interventions such as costly augmentative communication aids, protracted or intensive interventions.

Addressing local needs

In general terms, the UK is experiencing a number of long-term demographic changes (some of which are identified above).

There is significant local variation within these general trends. It is important to understand what these changes and variations imply in relation to the provision of local SLT services. Other local factors to be taken into consideration include: employment, cost of living, housing, transport and, particularly, levels of deprivation.

There are information resources available online from which planners, commissioners and providers can find out more about local and regional demographic factors. Some of these can be found signposted on the RCSLT website www.rcslt.org .

Local public health teams will also be able to sign-post local services to relevant data and information for their area.

There will also be learning from data collected by services. The RCSLT has developed an online tool called Q-SET, the Quality Self- Evaluation Tool to help you collate local SLT service derived information http://www.rcslt.org/resources/qset . Q-SET should be used alongside national and local data to support service planning and evaluation of service delivery.

Through completing Q-SET, provider services can:

- use the resource every 9-12 months to review progress in meeting action plans and to demonstrate service enhancement
- compare their service with other similar service types e.g. urban, rural, acute, community, adult, paediatric, education, 3rd sector
- demonstrate that their service meets the needs of the service users
- identify areas of strength and generate action plans relating to areas of development.
- submit the results as part of the evidence for a clinical audit
- retain ownership of the monitoring and development of services ensuring that strong professional standards are maintained in the context of multi-agency teams

Service providers completing Q-SET will support commissioners to:

- reduce the 'postcode lottery' of service availability and quality
- have high quality information that is relevant and accessible
- have an overview of developments, trends and initiatives within the service
- have accurate and timely statistics to support performance management and monitoring
- collect data to contribute to the debates on benchmarking. Where benchmarks do not yet exist Q-SET will enable Commissioners to contribute to this in the future
- collect examples of good practice to inform other pieces of work and the development of services as a whole.

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Locally derived information will help SLT services to illustrate:

- the numbers of patients/clients seen
- sources of referral
- amount of resource used in providing a service to the client e.g. number of sessions and skill mix
- nature and severity of the disorder, disability, psychosocial impact at the onset of intervention
- nature and severity of the disorder, disability, psychosocial impact at the completion of intervention.
- level of satisfaction with the service.

Service provision

Speech and language therapists have a role in delivering specialist and targeted support to clients, carers and their families. Speech and language therapists can also reduce long-term demands on services by addressing immediate needs that arise from circumstance rather than underlying impairment. Providing training for the wider workforce is integral to the speech and language therapists core role, as outcomes for people with speech, language and communication needs SLCN are improved when the whole workforce is able to contribute appropriately to care pathways.

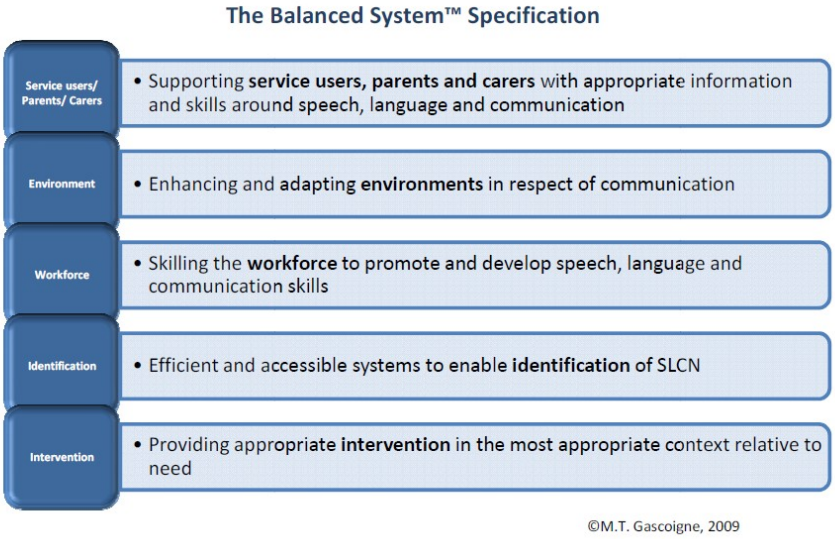
SLTs also work with the wider workforce contributing to the public health agenda, promoting health and well-being in respect of communication and swallowing. There is little awareness outside the profession of the role of speech and language therapists in preventing the development of speech and language impairments and the further impact and consequences of different speech, language and communication disorders upon health, education, social integration and employment.

The challenges of meeting the speech, language and communication needs (SLCN) of a given population are best understood through a social (participative) model. Key elements of a total service specification will start with:

- identifying the needs of the service user, parent or carer for support and information
- identifying/assessing and diagnosing specific SLCN and providing appropriate intervention.
- considering needs of service users within the environments they encounter
- training the wider workforce that interfaces with them to maximise opportunities for positive outcomes.

The balanced system (diagram 1) below illustrates the wider context for how SLTs contribute to this range of activities. The needs of service users should be considered in service specifications. The role of SLTs in supporting the active participation of service users in service planning, adapting the environment and enskilling the workforce is as relevant as the SLT role in identification and intervention.

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Workforce

Careful planning of services, including joint commissioning, will help to shape the workforce and inform the skill mix required to deliver high quality services, improve outcomes and support value for money. Because the commissioning and planning of services relies on the evidence base for a given type of SLCN or model of practice, it is essential that clinical and managerial expertise from speech and language therapists is available to support innovation and quality of service design.

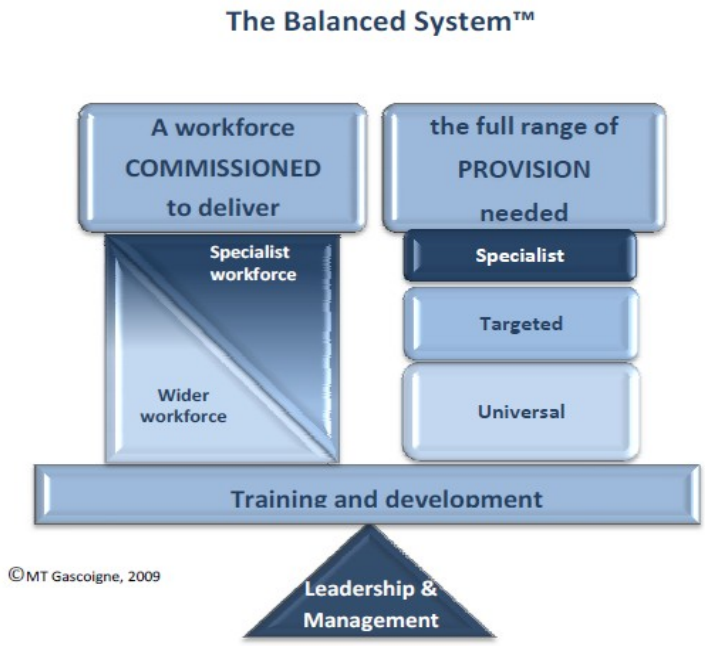
Speech and Language Therapists, as part of the wider workforce, may be employed by a range of organisations, including the third sector, social care and education or be working as private practitioners.

Equal Access to services is of importance to local decision makers. Local demographic profiling will inform workforce requirements. For example, bilingual staff and support workers are required in most areas to meet the needs of diverse communities. The appropriate skill mix should enable services to be family-centred and be culturally and linguistically appropriate and responsive. It may be necessary to consider increasing home delivered services or providing services in unusual locations.

The RCSLT also acknowledges the important role that Assistants and Support Workers have in the delivery of effective speech and language therapy services. Assistants and Support Workers are integral members of both speech and language therapy and multi-disciplinary teams, engaged in a wide range of clinical settings with diverse client groups, duties and responsibilities. http://www.rcslt.org/aboutslts/rcslt_statement_v3.pdf

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In order to support more effective use of skill mix, SLT services also need to provide education and training of the wider workforce and not be focussed solely on direct patient / client care. For all services, this is critical to secure the appropriate balance of cost-effective universal, targeted and specialist services.



PRACTICAL CONSIDERATIONS

Many people involved in strategic planning, commissioning or reviewing services will not be familiar with speech and language therapy, its objectives, the needs of clients requiring speech and language therapy, the principles driving the profession, or the evidence base and the following points may support people.

- Where possible, draw on the evidence base.
- Communicate clearly and succinctly.
- Avoid using acronyms and provide a glossary of terms.
- Do not assume knowledge of local arrangements or the requirement to interface with other agencies
- Set your service in the context of local priorities.

The RCSLT's Communicating Quality 3 (CQ3) provides clear guidance on care pathways, clinical standards and issues related to quality assurance. This information should be used in submissions to support commissioning quality services.

The following guiding principles have been adopted and apply to all client groups. Services are to:

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- be family centred and culturally and linguistically appropriate and responsive
- be comprehensive, coordinated and team based
- work with and communicate effectively with other services meeting the needs of the client
- be evidence based
- ensure equal access
- involve the family and carers
- include training and education of co-workers
- ensure practitioners continuing professional development and appropriate support.

Evidence of the impact of the service will be important to commissioners and providers. Providers will need to demonstrate the impact of their service, particularly when services are being reviewed. Determining the objectives of the service will support the process of outcome measurement. SLT services will need to provide information on outcomes achieved and levels of client satisfaction. Some of this information can be gathered through use of the RCSLT's Q-SET tool, as detailed above.

Managers of speech and language therapy services will need to equip themselves to engage effectively and positively with those who are commissioning or monitoring services. They will need to:

- identify who is commissioning or responsible for overseeing different services. For example, health commissioners may be working with commissioners for education/head teachers. It is important to identify who is taking the lead for each aspect of the service delivery in the locality.
- establish good working relationships and effective communication with those commissioners and planners for their area of responsibility.
- be aware of local priorities and commissioning plans and strategies.
- have a good understanding of the commissioning/planning/monitoring framework for the locality
- be equipped with local data, knowledge and evidence to the tendering process
- be clear of the unique contribution of the service to improving health, employment, education and social outcomes
- be able to clarify and demonstrate local working partnerships and collaborations
- provide data describing the service provided, (numbers and types of patients, numbers of attendances, health and social outcomes etc).

The RCSLT has developed a range of resources to support its members with Continuing Professional Development. CPD is a regulatory requirement for all SLTs and this requires all HPC Registrants to demonstrate how the CPD they have undertaken has sought to enhance service delivery and to be of benefit to service users. The RCSLT has endorsed this requirement through its own CPD standards. http://www.rcslt.org/cpd/resources

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THE EVIDENCE BASE

The commissioning and planning of services must be informed by the evidence base of effective practices.

This Resource Manual SLCN is based on a synthesis of existing published research. The threshold for inclusion in the syntheses has favoured the most scientifically robust research methodologies which have often reflected medical (impairment) rather than social (participative) models of care.

In the section summaries, emerging practices that have not been included in the evidence synthesis, are referred to and should be considered alongside the syntheses. This tension between empirical evidence resulting from robust research, which by definition is retrospective, and the needs to encourage innovation and service re-design to support improvements in outcomes for people with speech, language, communication and swallowing difficulties is natural and unavoidable. Emerging practice will not have the same evidence base and therefore less empirically stringent measures of evidence need to be taken into account for these areas including professional consensus and measures of service user, parent or carer experience. However, because of the value of some emerging innovative practice, they have been included in this resource.

An overview of the methodologies employed in identifying practices that are included in this resource accompanies this document.

Using these resources

Speech and language therapy managers can assist commissioners by understanding their agenda and the objectives that they are to be assessed on.

The Royal College of Speech and Language Therapists is providing these resources to assist speech and language therapists in gathering the core data required to support service tendering agreements, service planning, monitoring arrangements and/or where services require specification.

Each part of these resources is focused on a specific area.

The resources provide:

- *The Contextual Synthesis.* This includes definitions, information on the incidence and prevalence of the disorder, key contribution of speech and language therapists, consideration of the implications and broader consequences of the disorder.
- *The Synthesis of Key Literature.* This summarises the evidence of the impact of speech and language therapy.

Each section within these resources gives succinct information to inform the factual content for any service planning activity. These include:

- Key points
- Topic –What is [the condition]?
- How many people have [the condition]?

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- What causes [the condition]?
- How does this condition affect individuals?
- What are the aims/objectives of speech and Language therapy interventions for [this condition]?
- What is the management for people with [this condition]?
- What is the evidence for Speech and language therapy interventions in [this condition]?
- Studies
- Assessment methods
- Speech and language therapy interventions
- Summary
- References

This information will need to be put into context, using local information.

Other guidance and resource materials

It is recognised that service managers may wish to amplify or clarify, an aspect of their service by providing reference to other national or local research of relevance.

The RCSLT has a range of resources which can be used to further support and inform the commissioning, planning and provision of services for people with speech, language, communication and swallowing needs. These can be found on the RCSLT website: www.rcslt.org

The RCSLT is grateful to the experts from within the SLT community who contributed to the evidence published in this document.

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METHODOLOGY FOR SYNTHESIS OF LITERATURE

Introduction

The focus of the interventional synthesis within these briefings is to provide a synopsis on the effectiveness of speech and language therapy interventions for each specific condition.

The interventional syntheses are produced by reviewers within the Information Resources Section (within the Health Economic and Decision Science Section) at the School of Health and Related Research (ScHARR). Information specialists/reviewers for this bulletin were Diana Papaioannou and Anna Cantrell.

Methodology

The interventional syntheses are not intended to be a full systematic review within each topic area. However, they draw upon systematic review techniques to ensure that the syntheses are developed according to systematic, explicit and transparent methods. The intention of the syntheses is to consolidate twenty articles which represent some of the best research for each topic area.

Literature searching

Systematic literature searches were undertaken to identify a range of evidence for each interventional synthesis. The interventional syntheses do not attempt to consolidate all research within a particular topic area; rather they aim to present a careful selection of the most current research within that field. Therefore, the approach adopted for the literature search aims to be comprehensive reflecting this systematic and explicit approach.

Firstly, search terms were selected within the project team drawing on the expertise of four speech language professionals. This involved listing all possible synonyms describing the condition or population (for e.g. children/infant, stuttering/stammering) and combining those with terms to describe speech and language therapy. Terms were used in both free text and thesaurus searching. The following databases were used:

- ASSIA
- CINAHL
- The Cochrane Library (which includes the Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled trials, Database of Abstracts of Reviews of Effects, Health Technology Assessment Database and NHS Economic Evaluations Database).
- Linguistics and Language Behaviour Abstracts
- MEDLINE
- PsycInfo

All references retrieved from the literature searches were entered onto a Reference Manager Version 11 database using appropriate keywords.

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Selecting and obtaining relevant articles

Articles for inclusion were selected to illustrate the range of good quality evidence within each topic area. An initial screening of articles was undertaken by the Information specialists/reviewers who adopted the following principles:

- Articles must be empirical research evaluating the effectiveness of a particular speech and language therapy intervention
- Only articles published in English language are included.
- In general, only the most current (1998-present) literature is included. However, exceptions were made to this if a particular article was felt to be important to include.
- Where possible higher level evidence was included (systematic reviews, randomised controlled trials). However, this research did not always exist in every topic area.
- Efforts were also made to seek out literature that provided a range of perspectives on interventions for each topic area, i.e. both quantitative and qualitative research.

Following initial screening, the remaining articles were examined by two members of the team; each having considerable speech and language therapy knowledge and experience. Approximately, twenty articles were selected by the two reviewers with disagreements being resolved by a third reviewer.

Assessing the quality of relevant articles

Formal quality assessment of the articles was not undertaken. Instead, quality assessment involved using checklists as a guide to give an indication of the overall quality of studies and highlight the main good and bad aspects of each study. For each interventional synthesis, the included study designs are listed and the problems with each study design noted. General observations on study quality are made and common errors within the studies, where appropriate, are specifically noted. The checklists used are one for quantitative and one for qualitative studies from the Alberta Heritage Foundation for Medical Research.1 Additionally, when an identifiable study design was used, the appropriate Critical Appraisal Skills Programme (CASP) checklist was selected.2

Syntheses of the twenty articles

Each article was read in turn by one of the Information Specialists/reviewers. The key points were summarised including the objective of the study, the participants' characteristics, the methodology, the intervention, results and limitations. From this, articles were grouped into themes according to the factor being investigated (for e.g., length of intervention, personnel carrying out intervention, family involvement in treatment, nature of disorder). Results were summarised and drawn together within each particular theme and a summary paragraph provided at the end.

These syntheses first went out for review by selected individuals, identified by the research team, with particular expertise in the delivery or management of services to the

[1] LM Kmet, RC Lee, LS Cook (2004) Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields. Accessed at http://www.ihe.ca/documents/hta/HTA-FR13.pdf (Accessed on 25th September 2008, now no longer available)
[2] Critical Appraisal Skills Programme (2007) Appraisal Tools. Accessed at http://www.phru.nhs.uk/Pages/PHD/resources.htm on 9th January 2009.

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specific client group. Comments were included in the second draft, which was then dispatched to those selected by the Royal College Speech and Language Therapists who were invited to attend a focus group day. These therapists gave detailed consideration to their specialist area and contributed to the more general discussion of one further area. Issues to be captured in the key points were also identified within the focus groups. These comments contributed to the third draft of the syntheses, which again went out to reviewers. In some cases, further work was required in order to modify the wording and reflect discussion.

Checklist for service managers involved in commissioning services

Have you presented incidence and prevalence figures and local demographic trends for the conditions in your area?

Have you provided information on local access and use of services in the context of the number expected and highlighted your approaches to inequalities?

Have you consulted systematically with users to inform development of this commissioning proposal?

Does your proposal fit/link with local cross agency priorities?

Have you outlined the range of services provided including training?

Have you made clear how this fits with future planning for your service over the next 3-5 years?

Have you stated the assumptions which underpin your thinking in the plan and for future developments?

Have you offered predictions about the likely impact of investment in the proposal?

Have you made clear where the risks are and what contingency plans you have put in place?

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RCSLT RESOURCE MANUAL FOR COMMISSIONING AND PLANNING SERVICES FOR SLCN

APHASIA

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Aphasia

Key Points

1. Speech and language therapists play a unique role in identification and assessment of those with aphasia. The ability to identify levels of comprehension and expression as well as retained communication abilities are unique skills of speech and language therapists.

2. Difficulties with communication are a predominant feature in reducing access to education, employment and social integration

3. Speech and language therapists should be integral members of services supporting children and adults with aphasia, their families and carers.

4. Speech and language therapists have a key role in educating/training, others involved in care of those with aphasia including the family, health, education and social care staff.

5. Methods of speech and language therapy, supplemented by supported conversation provided by assistants, lay persons and family members show benefits in improving conversational skills

6. Computer-based therapy directed by a speech and language therapist is beneficial, cost-effective and acceptable.

7. Specific speech and language therapy programmes aimed at reducing certain impairments have been found to be effective with some patients.

8. Communication aids (AAC), improves communication competence of some persons with aphasia

9. Persons with aphasia remain at risk as defined by the Mental Capacity Act (2005)/ Incapacity Act and speech and language therapists are integral to assessing competence for consenting etc

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1. What is Aphasia?

Aphasia is a term used to describe a language disorder that results from damage to those areas of the brain that are responsible for language. For the majority of people the left hemisphere of the brain is dominant, controlling most aspects of language processing. Any damage to this area from head injury, disease, infarction or a bleed affects language functions (verbal, written and gestural). Additionally, the right hemisphere of the brain is involved in certain aspects of language processing and damage to this hemisphere can also cause some loss of function. The location, depth and size of the incident determines the degree of impairment present. There can be a total or partial loss of the ability to use or understand language; (National Institute of Deafness and Other Communication Disorders, 2002). It can affect one or several modes of communication including different modes of comprehension and expression, including speech, sign language, writing, and sometimes drawing and gesture.

There are different types of aphasia, which result from the area of brain affected. Terminology relating to the classification of aphasia has caused much debate, and it is recognised that different aphasias are not easily categorised.

Aphasia may exist while other cognitive abilities remain intact, though it commonly co-exists with other disorders. It is a long term and life changing condition, with approximately half of those initially affected going on to have long term aphasia. Although it can occur in children, it is predominantly a disorder of older people (Steele R D et al, 2003.)

2. How many people have Aphasia?

A cerebral vascular accident (a bleed or infarction) is the most common cause of aphasia and this condition is more prevalent in those over 55 years with the incidence rising with age. In the under 75s, men have a higher incidence of stroke (The Stroke Association, 2008).

Estimates of incidence and prevalence of aphasia following stroke vary (MacKenzie, 1992, cited in Greener et al, 2008), and there are no official figures (RCSLT, 2006).

Table 1: Incidence and Prevalence of Stroke and Aphasia

Stroke	
Incidence	**Prevalence**
Approximately 150,000 people in the UK have a stroke every year. Around 1000 people under 30 have a stroke each year. (The Stroke Association, 2008)	47 per thousand population, aged 55 years and over. 15 per thousand population-all ages Different prevalence rates indicated within different countries and populations
Communication disability	
Incidence	**Prevalence**
One third of people left with a communication disability following stroke (Department of Health 2007)	

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Aphasia	
Incidence	**Prevalence**
11400 people in Britain become aphasic every year following stroke (Enderby 1986, cited in Greener et al 2008). Aphasia present in a quarter of conscious patients who had a stroke within the previous 7 days (Wade 1986, cited in Greener et al 2008). 66 per 100000 population (Enderby P and Emerson J, 1995) One-third of stroke survivors are affected by aphasia (Backheit et al 2007, van der Gaag 2005).	At any time there are around 250,000 people in the UK who have aphasia and many of these people will be under retirement age. (The Stroke Association, 2008). 12 % of stroke survivors are still aphasic at 6 months (Wade 1986, cited in Greener et al, 2008). 50 per 100000 population at six months post stroke (Enderby & Emerson, 1995) Between 30-43% of those affected will remain severely affected in the long term (Bakheit et al, 2007).

3. What causes Aphasia?

Aphasia is caused by damage to an area of the brain responsible for language.

The damage may be caused by:

- Stroke
- Head injury
- Brain tumour
- Neurosurgery
- Brain infection e.g. Encephalitis
- Neurological diseases e.g. Progressive supranuclear palsy, multiple sclerosis
- Drug misuse
- Dementia (Primary Progressive Aphasia)

As a result of this damage, the pathways for language comprehension or production are disrupted or destroyed. For most people, this means damage to the left hemisphere of the brain but can also occur following damage to the right hemisphere of the brain.

Stroke is the most common cause of Aphasia, and risk of Stroke is associated with a positive family history, heart disease, lifestyle, presence of obesity, diabetes and high blood pressure and incidence is higher in the Asian, African and African–Caribbean communities. Lifestyle issues include high cholesterol, smoking, heavy drinking and a fatty diet (The Stroke Association, 2008).

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Aphasia

Aphasia is most commonly a disorder of older adults, but can appear in children as a developmental disorder.

4. How does Aphasia affect individuals?

Aphasia affects both the individual and those around them. The person with aphasia, their family and friends, and the wider society, all need to adapt to facilitate communication.

Steele et al., (2003) describe Aphasia as having a "devastating impact on the lives of people who are – prior to onset – typically fully competent communicators" (p98).

Effect on abilities

A person with aphasia often finds that his/her ability to understand, speak, read or write is affected, yet their intellect remains intact. A person with aphasia may have problems in answering the telephone, watching television or listening to the radio. Everyday tasks can become impossible. This often leads to frustration, social isolation and a breakdown in close relationships (Speakability, 2006)).

Effect on roles and position

The practical impact of the disability can be severe, with two income families adapting to living on benefits, as often as well as the patient being unable to work, their partner must give up work in order to care for them (Parr, 2007). What can result are a loss of position within the family and other areas of life, which may result in a loss of self-worth. Relationships with family members can also be strained due to communication breakdown, leading to frustration and tension (Parr, 2007).

Effect on participation in society

People with aphasia may face barriers to full participation in society. Returning to previous employment may be difficult depending on the flexibility of the workplace, and studies suggest that there is not a strong relationship between severity of language impairment and return to work (Hinckley et al, 2002). Parr et al 1997 (cited in Hinckley, 2002) found that return to the same level of work as pre-onset was rare. Additionally, participation in many other social roles including household management and recreation has been widely found to be negatively affected by aphasia (Hinckley, 2002).

Psychological affects

The psychological affects of aphasia can be compared to the grieving process, as the individual may experience loss of their former self as well as a disconnection from those around them. This can be exacerbated by the affects of brain damage, which can predispose a patient to anxiety, depression, neglect and excessive emotion (Tanner, 2003).

Interviews with people affected by long term Aphasia by van der Gaag et al (2005), found that there were issues around loss of control, loss of independence, loss of desire to participate, and day-to-day frustrations. Simmons-Mackie and Damico (2007) suggest that people with Aphasia face exclusion from full participation in conversations, from obtaining information, and from making important life decisions.

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Vulnerability

Aphasia can also create vulnerability within the individual, and risk of abuse, as the individual with Aphasia may not able to control their own environment or seek help. They may be unable to consent to treatment, in which case family members may have to act of their behalf. This may be particularly applicable if Aphasia is accompanied by other cognitive difficulties, in which case it is necessary to follow the guidelines set out in the Mental Capacity Act (2005).

"Aphasia has a significant negative impact on the patient's well-being, independence, social participation and quality of life and is often associated with severe depression" (Bakheit et al, 2007).

Table 2: International Classification of Functioning: Impact of Aphasia

ICF Dimension	**Impact**
Impairment	Area of brain damaged Auditory or reading comprehension Verbal or written expression Dyspraxia
Activity	Severity of communication problem Aspects of communication affected Ability to communicate thoughts and ideas Ability to communicate with others Ability to express and gain wants and needs Ability to learn
Participation	Participation in everyday activities Work/education Social life Reduced autonomy Diffident in control over life Limitations in decision making Limited social integration Limitations in educational activities Limitations in independence Risk of not having needs understood, or abuse
Wellbeing	Emotional distress Stresses on relationships Depression

The long term and wide reaching impact of Aphasia has implications for the role of Speech and Language Therapy. The patient with aphasia requires contact with a Speech and Language Therapist, not just in the initial stages of recovery, but for some it is appropriate as part of the long-term care package. Life changes for the patient may necessitate the communication needs to be considered and supported in a different ways. The Speech and Language Therapist may also be required to educate and work with other people in the life of the person with Aphasia, which again may mean that the input of the Speech and Language therapist can be needed many years after the initial onset of Aphasia.

The risks of non-treatment are that the individual with Aphasia is unable to participate in family life and society, leading to unemployment, family breakdown, and psychological challenges, all of which have an ultimate cost to health and social services.

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5. What are the aims and objectives of Speech and Language Therapy for individuals with Aphasia?

When working with the person with aphasia, the SLT will often be working as part of a Stroke or multi disciplinary team.

Recent policy, most notably the National Clinical Guidelines for Stroke (Intercollegiate Stroke Working Party, 2004), and the National Stroke Strategy (Department of Health, 2007), has emphasised the need for a unified, multidisciplinary response to stroke, continuing from prevention, through acute care and rehabilitation, into community and long term care. As such the aims and objectives of Speech and Language Therapy must be seen within the wider aims of this strategy, and indeed will be to some extent dictated by these guidelines.

The remit of the Speech and Language Therapist goes beyond simply providing therapy for a specific communication problem, by the very nature of communication, which impacts on all areas of life. Therefore, SLTs must also take into consideration in a wider sense the findings of the National Clinical Guidelines, that patients and carers want timely access to good quality and appropriate services, and to be treated by staff who understand their needs, including their communication needs.

There is no universally accepted treatment which can be applied to every aphasic person (Greener et al 2008). This is due to the great variation of persons with aphasia, in terms of symptoms and severity of these, and in individual differences in lifestyle needs and preferences. A recent Cochrane review by Kelly et al (2008), emphasised the importance of functional approaches to therapy, stating that “The aim of rehabilitation in aphasia is primarily to maximise successful communication in day-to-day interactions” (p35).

In general, Aphasia therapy strives to improve an individual's ability to communicate through multiple strategies by aiming to:

- help the person to use remaining abilities.
- restore language abilities as much as possible by developing strategies.
- compensate for language problems.
- learn other methods of communicating.
- Coach others (family, health and social care staff) to learn effective communication skills to maximise the aphasic patient’s competence

About half of recovery from stroke occurs within the first month, but it can continue up to 6 months post stroke (Wade 1997, cited by Greener at al 2008) and beyond. Single and group case studies have demonstrated improvements in language recovery after many years post-stroke (Fillingham et al 2002, Mortley et al 2004, Hickin et al 2002). There is evidence for the potential of neuroplasticity in the brain, that is the ability of the brain to use other regions for functions where the original region has been damaged, and that early, intense treatment can enhance this (Bakheit et al, 2007).

Treatment can involve individual therapy that focuses on the specific needs of the person and/or group therapy which offers the opportunity to use new communication skills in a comfortable, more social context.

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Aphasia

Aphasia is an experience which is "largely shaped by how other people react and behave within different settings" (Parr, 2007, p21). Family, friends and any services provided should all be considered within the therapy process.

Family involvement is often a crucial component of aphasia treatment so that family members can learn the best way to communicate with their loved one, and facilitate access to support networks. The therapy aims to help family members:

- understand aphasia
- understand the new ways their family member may be using to communicate
- learn how to adapt their own communication to enhance that of their partner
- learn how to support the person in treatment, for example, helping them become involved outside the home.

(NIDCD, 2008)

Table 3: International Classification of Functioning: SLT aims in Aphasia therapy

ICF	Aims
Impairment	Regain lost function, including understanding of language and ability to use expressive language.
Activity	Minimise communication disability by ensuring maximum use of current abilities. May include compensatory strategies and alternative means of communication.
Participation	Enable participation according to individual's circumstances and preferences. Develop social skills and confidence, promote independence and decision making. Reduce isolation and increasing social integration.
Well being	Maximise individual's sense of well being and quality of life. Develop coping strategies.

The aims and objectives of Speech and Language Therapy in the area of Aphasia, imply the need for ongoing and seamless availability of input, from the acute stage, to rehabilitation, and into the community.

The management process will differ for people who develop Aphasia e.g. through a progressive neurological disorder, or brain tumour. The above principles of timely and effective intervention still apply. However, rather than an acute stage followed by some recovery, we would expect a mild onset followed by a progressive worsening of the disorder. In this case, continual review and adapting therapy and communication aids to a changing ability will be key.

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6. What is the management for individuals with Aphasia?

The Speech and Language Therapist will be working as part of multidisciplinary team, including people from health, social and voluntary organisations. They will also be including within the management process the individual's family members and others in their communication environment. There are time implications for the education and training that SLT's provide to other professionals and family members. Working as part of a multidisciplinary team necessitates taking on team roles, and attending meetings, which also have time implications.

The National Stroke Strategy (2007) emphasises inter-disciplinary input at the following key points, and Speech and Language Therapy should be viewed as a part of a team providing this:

- stroke specialised rehabilitation within the hospital
- transfer of care from hospital to community
- locally available resources to support long term needs of individuals and their carers
- review 6 weeks after leaving hospital, before 6 months has passed, and then annually
- opportunities to participate in community life and then return to work

The following is a detailed explanation of the role of the Speech and Language Therapist.

Assessment

Initial assessment will take place in the acute phase for stroke patients and patients with brain injury, and at the point where symptoms become apparent in patients with a progressive Aphasia. For all individuals, clarity about communication abilities will assist other disciplines involved in care, as will training in appropriate communication with the individual.
The Speech and Language Therapist will assess the individual's communication strengths and weaknesses, including the nature and extent of the aphasia to establish a baseline from which to measure change and timing for review. Formal assessments and informal approaches are used, e.g., observation and conversational sample (Steele et al, 2003). Assessment aims to identify the nature and extent of Aphasia, residual communicative skills, impact on individual and their family, individual psychosocial situation and general well-being.

Of particular importance in management of people with aphasia is for the assessment to take into account the psychosocial issues which may affect them, including emotional state and interpersonal relationships. Due to the challenges the person with aphasia may face in expressing their thoughts about such issues and because of the importance of significant others in the therapy process, it may be necessary to use specially designed assessment for this. One example of such an assessment is the Code and Muller Protocols (1995) which were developed to assess psychosocial issues specifically for people with aphasia. This includes 'aphasia friendly' visual aids to assist the person with aphasia to answer questions and is intended to gather information from them, their family and therapist.

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Table 4: International Classification of Functioning: Assessment in Aphasia Management

ICF	Assessment
Impairment	Thorough assessment of the individual to identify which aspects of language are affected.
Activity	Assessment of individual's remaining abilities Assessment of their ability to communicate functionally Assessment of communication environment to understand potential for communication.
Participation	Identify aspects of life/role, which are impeded by communication deficit. Establish from individual and family the person's preferences and priorities, in order to establish short and long term goals for participation.
Wellbeing	Establish individual's mental and emotional state through formal and informal assessment. Establish their readiness to engage in therapy.

Intervention

The Clinical Guidelines for Stroke RCP (2008) state that "Patients should undergo as much therapy as appropriate to their needs as they are willing and able to tolerate", and "the team should promote the practise of skills gained in therapy into the patients daily routine in a consistent manner" (p24).
The assessment results inform the aims and objectives of intervention. These will have been negotiated with the individual and as appropriate with their family/carers. Both prognosis and social needs may differ for younger patients (National Clinical Guidelines for Stroke, 2004).
The management process has the person and others in their environment playing a central role in decision making about intervention, including therapy goals. Where appropriate referring the individual to other relevant sources of support (Royal College of Speech and Language Therapists, 2006).
The speech and language therapy intervention aims to target the areas of need. These may be addressed on an individual level, within a group, or working in partnership with carers and other professionals. No one approach is necessarily more important than another and there is professional consensus that some people benefit from a range of approaches.
Intervention will also involve working with others involved with the persons care to ensure they are aware of the communication difficulties and understand the best way to communicate with the patient. This may include anyone involved in the person's rehabilitation, or in some cases end of life care.

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Table 5: International Classification of Functioning: Therapy in Aphasia management

ICF	Therapy
Impairment	• Targeting specific processes. • Maximising potential of brain plasticity. • Retraining functions to access language areas of brain. • Relearning lost vocabulary. • Neurolinguistic programming.
Activity	• Teaching the individual compensatory strategies such as topic fronting and environmental modifications. • Introducing alternative methods of communication where appropriate such as gesture, drawing and symbols, or computers and other technology. • Work with communication partners to maximise effectiveness, facilitate decision-making and promote opportunities for communication.
Participation	• Treatment and techniques to support the individual and their significant others to achieve short and long term goals, e.g. using Participation Therapy, or Total Communication. • Assisting with lifestyle and identity changes. • Facilitate access to employment, education, goods and services where appropriate, including signposting to local community and voluntary organisations.
Well being	• Providing full and appropriate information to individual and their family about aphasia. Providing support to patient and family during an adjustment period • Referring for counselling or other emotional support in necessary.

Long-term rehabilitation

The SLT should be involved in discharge planning and long-term rehabilitation. The National Clinical Guidelines for Stroke (RCP, 2008) state that, "any patient with reduced activity at 6 months or later after stroke should be assessed for a period of further targeted intervention. For Speech and Language Therapy, this implies regular reviews of people living with long term communication problems following stroke, and looking at further intervention which may at this stage focus on activity and well being, and involve voluntary and community groups. The availability of intervention in the long term is emphasised in the National Stroke Strategy (2007) which states, "for months or even years after a stroke, there may be a need for specialised, therapeutic help – for example to improve speech or mobility" (p2).

Augmented and Alternative Communication

Augmentative and Alternative Communication (AAC) refers to any system of communication that is used to supplement or replace speech, to help people with oral communication impairments to communicate. For individuals with aphasia this could range from 'low tech' aids such as drawing and writing, or communication books, to 'high tech' aids such as computerised voice output communication aids.

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The objectives of introducing AAC to an adult with an acquired communication problem is to maximise their communicative function in the areas of life that are seen as a priority by the patient, and continually review the changing needs of the patient. It is necessary to:

- identify participation and communication needs
- assess capabilities in order to determine appropriate options
- assess external constraints
- find strategies for evaluating the success of interventions.

(Beukelman & Mirenda, 1998))

To ensure appropriate access to the range of resources available, individuals who may benefit from communication aids should have access to an AAC specialist or team, who are skilled in assessment, planning, intervention and review in this area.

Cultural diversity

Individuals who use English as their second language and have aphasia, along with their families, may need help to access services. An interpreter may be required to assist with conducting the SLT assessment to ensure it is both accurate and reliable and to facilitate understanding of therapy and implementation of treatment strategies. There are time and cost implications when working with interpreters/co-workers for example, in taking a case history, completing a full assessment in all languages spoken by the individual and their family. SLTs working with people with aphasia need to be aware of cultural and religious factors which may impact on ability to access services, e.g. timings of services need to be culturally sensitive, for example, not offering appointment times which coincide with religious observations (Communicating Quality 3, 2006).

Literature synthesis

2. What is the evidence for SLT interventions for Aphasia?

Details of studies

All studies, selected for consideration here, were published in English, with the earliest being published in 1992. Five studies were conducted in the UK, three in the USA, three in Germany, one in Canada, one in the Netherlands and one in Australia. One study was conducted in three countries which were UK, Portugal and the Netherlands. Four studies synthesised results from studies worldwide; two meta-analyses, one systematic review and one literature review. The number of individuals who took part in the studies ranged from 4 to 116. The studies covered a range of interventions and associated factors including laypersons' involvement in therapy, augmentative and alternative communication, intensity of speech language therapy, computer-based therapy and delivery or format of therapy.

Study quality

The quality of the 20 studies was variable. The Cochrane systematic review (Greener, 1999) was of good quality; Cochrane reviews are generally considered to be high quality examples of the systematic review methodology. The two meta-analyses (Robey,1998; Whurr, 1992) had a number of

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methodological problems. Whilst these studies provide a good overview of the effectiveness of speech language therapy for aphasia, their results should be interpreted with caution. Generally, small numbers of individuals took part in the studies, and often those who did take part were motivated individuals willing to take part.
The randomised controlled trials (RCTs) were generally of good quality. Common errors in the RCTs were failure to disclose methods of randomisation and small numbers of individuals taking part in the studies. This latter error means caution must be applied if generalising study results to the entire population of aphasics. The clinical trials were of fair quality. The results from these studies need to be interpreted with caution due to the limitations of all clinical trials i.e. lack of randomisation introducing bias. Results from interventional studies and case studies have been included in this synopsis. However, it is important to note these provide weaker evidence of effectiveness of treatment.

Lastly, it is worth noting that the findings from the non-UK papers need to be interpreted cautiously due to generalisability of findings to the UK population.

Synthesising pre-existing studies

A number of studies attempted to draw together the conclusions of the studies investigating therapy for aphasic individuals. Two meta-analyses, one systematic review and one literature review aimed to confirm that speech and language therapy does work for people with aphasia. Furthermore, the studies synthesised research to identify which qualities of therapy (e.g. intensity, duration) make for successful treatment. It is essential to draw attention to the variable quality of the following studies. The systematic review (Greener et al, 1999) is a Cochrane systematic review; which are generally considered to be high quality examples of the systematic review methodology .The meta-analyses (Robey, Whurr) serve well as providing some clarity to a convoluted area. However, they both demonstrate serious methodological flaws. Lastly, the literature review (Basso, 2005) again provides some clarity in this complicated area but its results must be interpreted with caution since there has been no systematic method used in identifying and synthesising the research contributing to the literature review. The findings of the literature review are based on one person's interpretation and could be subject to bias.

Greener, et al (1999) undertook a Cochrane systematic review that addressed a number of questions relating to the treatment of aphasia using speech and language therapy. This included whether therapy was better than no treatment at all, whether delivery of therapy by laypersons affected the outcomes and what types of aphasia therapy worked best. The review focused on identifying randomised controlled trials, which are generally considered to be the gold standard study design when assessing effectiveness of treatment. Twelve trials were ultimately included in the review, with the number of participants ranging from 12-191. The average age of participants was 65-75 and the delivery of intervention ranged from immediately after stroke to 17 years post stroke. Overall, speech language therapy could not be shown to be clearly effective or clearly ineffective within a randomised controlled study design. Studies identified were very old and mostly with a poor methodology or lacked detail in their reporting.

In 2009, Kelly et al undertook an update of this review. The authors identified an additional 20 studies published January 1999-June 2008 and synthesised the findings from these studies with 12 trials included in the original review. All studies were randomised controlled trials and included a total of 2014 participants. Findings were similar to those reported in the Greener et al Cochrane review

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(1999). Attention was drawn to the difficulty of using the research design, the randomised controlled trial, for evaluating complex interventions. There is no evidence that speech and language therapy (Royal College of Speech and Language Therapists, 2005) post-stroke for aphasia is clearly effective or ineffective. Therefore, there is no evidence that the provision of SLT post-stroke for aphasia should change. There are some problems in synthesising evidence from randomised controlled trials in this field. Whilst it is essential that SLT for aphasia is individually tailored according to the patient's specific needs, this makes synthesising individual studies difficult; i.e. it is hard to compare interventions that differ significantly between each other. The authors make the important point that several guidelines (RCP 2008, SIGN 2002) support the provision of SLT for patients who have aphasia as a result of stroke, based on non-RCT evidence. The authors also report that there may be some evidence to suggest that high intensity interventions produce better outcomes for patients. However, it seems patients struggle to complete intensive courses of therapy which is an important clinical implication to take into account. It is clear that there is much work needed in this area to devise robust and sufficiently populated studies to explore components of treatment programmes that may affect outcomes.

Overall, the evidence seems to suggest the need for highly individualised therapy for people with Aphasia, and that intensive therapy may be more beneficial, but this must be balanced with the individual's ability to complete intensive courses. This raised questions regarding the optimum time of intervention.

Robey (Beukelman & Mirenda, 1998) undertook a meta-analyses that incorporated study designs other than randomised controlled trials. This has methodological flaws, mostly due to poor reporting methods. It fails to describe how studies were selected for inclusion in the meta-analyses, for example if a predefined set of criteria were used.
These authors looked at how the amount of therapy and type and severity of aphasia affects the outcomes of persons with aphasia. Fifty-five studies were included in the meta-analysis, of variable study design. On average, treatment for aphasic patients was shown to be effective. When treatment is begun in the acute phase of recovery, the effect size is 1.83 times greater for treated than untreated individuals, demonstrating therapy needs to commence as early as possible post-stroke. When treatment is begun in the post-acute and chronic stages of aphasia, although the difference in effect size is smaller in treated and untreated individuals, it still remains. The more intense the treatment, the greater the change and therapy is best provided on a 2-hour plus per week schedule. In terms of severity of aphasia, treatment for severely aphasic individuals results in significant effects. Most studies tended to look at moderate or severe aphasia or a mixed population. In terms of the type of aphasia, there were no real outcomes to report. However, studies tended to include populations of different types of aphasia. Similarly, there were no conclusions to report about the effectiveness of different types of treatment, with most studies not specifying a type of treatment. *Taken at face value, this meta-analysis supports the value of speech and language therapy for Aphasia, and emphasises the advantages of early intervention and intensive therapy.*

Basso (2005) undertook a literature review to examine the effects of intensity and duration of aphasia treatment and the findings from this review support those in the meta-analysis by Robey (Beukelman & Mirenda, 1998). Studies that did not find a significant difference between treated and untreated individuals had fewer sessions, fewer hours of therapy per week and were of shorter duration. *Despite the methodological flaws of these studies, they provide a good summary of a difficult area and show some clear indications that treatment for aphasia does work and works better if more intense and of longer duration.*

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Laypersons' Involvement in Therapy

Several studies investigated the value of laypersons' involvement in speech and language therapy for aphasic individuals. Sometimes this was in a supportive role whereas other studies investigated the role of laypersons delivering therapy themselves. Most often, a layperson was an aphasic person's partner or friend.

Kagan et al (Clarke et al., 2001) investigated the efficacy of an intervention called 'Supported Conversation for adults with aphasia' (SCA). They looked at both how feasible it was to train volunteers as conversation partners for aphasic patients and the effect of this training on those with aphasia. Forty patients with moderately severe or severe aphasia were paired up with 40 volunteer conversation partners. The volunteer conversation partners were randomly assigned to two groups - a comparison group and a training group. Those in the training group took part in a one day workshop in which they received formal training on how to acknowledge and reveal the competence of aphasic patients. The workshop included a conceptual/motivational module, technical module and role-play. The volunteers also took part in a 1 1/2 hour hands on session working with a group of adults with aphasia. Those in the comparison group were merely exposed to aphasics and received no training. The volunteers were videoed whilst carrying out a semi-structured interview with an aphasic conversation partner pre and post the SCA intervention. Volunteers who had received SCA intervention scored much higher in the post-SCA interview than the first in terms of acknowledging and revealing competence in their aphasic conversation partners. Volunteers in comparison group did not improve at all. In addition, the aphasic patients partnered with the volunteers who had received the SCA intervention were involved in more conversation, interaction and transaction than those in the comparison group.

Cunningham et al (2003) conducted a small study using the SCA intervention, where a partner or friend acted as the conversation partner. Four aphasic patients and their partner/friend were videoed having a conversation for 15 minutes. The pairs then received 5 weekly 1.5 hours sessions that included discussion of expectations, problems and knowledge of aphasia; explanation of conversation structure; examination of the pre-SCA video recording looking at sections demonstrating successful and unsuccessful patterns of conversation and finally role play sessions. A further 15 minute video recording of the aphasics and partners conversing demonstrated that three of the four pairs improved in conversation and use of gestures. Whilst this study was very small and results did not reach statistical significance, it demonstrates that SCA delivered to couples can be beneficial.

Meinzer (2005, 2007) undertook some research into a particular type of therapy called Constraint Induced Aphasia Therapy (The Stroke Association, 2008). These studies demonstrated that both partner involvements in therapy in a version of CIAT called CIATplus and delivery of CIAT/CIATplus by laypersons are successful in improving outcomes for aphasia patients. These studies are discussed in more detail in the section titled **"**Intensity of aphasia therapy."

These studies suggest that there is value in spending time training lay people to work with persons with aphasia. However, there is no evidence as to whether or not Speech and Language Therapy delivered by non SLTs (e.g. assistants) is effective or not.

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Intensity of aphasia therapy

Several studies investigated the value of high intensity speech language therapy for aphasia.

Meinzer (2005) investigated the efficacy of short-term, intensive language training called constraint-induced aphasia therapy (CIAT) (The Stroke Association, 2008). The principles of this therapy are to undertake an intense programme of 30 hours training within two weeks. CIAT consists of communicative language games of increasing level of difficulty undertaken in groups of 2/3 aphasic patients. The games consisted of pairs of cards with object drawings on. Players are encouraged to ask for matching cards using verbal expressions and phrases. Non-verbal communication strategies are constrained. Twenty-seven patients with chronic aphasia (15 moderate, 10 mild and 2 severe) were divided into groups of 2/3 and assigned to a CIAT group or a CIAT plus group. CIAT plus included extra sets of cards in the communicative language game not included in the standard CIAT and additional exercises were set to practice with a family member. Patients' relatives were asked to encourage verbal communication as much as possible. On language function tests, there was significant improvement for both groups after training, which remained stable after a 6 month period. The quality and quantity of everyday communication was rated as improved by patients and relatives after therapy. In the follow-up, this was more pronounced for the CIAT plus group. Improvements were seen equally for all patients, irrespective of age, severity and duration of aphasia, demonstrating a wide range of patients can respond to CIAT.
The results of this study seem to provide further support for intensive therapy.

Meinzer (2007) further investigated the CIAT programme to examine if laypersons could be trained to apply the programme for chronic aphasics. Ten laypersons (patients' relatives) received a 2 hour introduction into the principles of CIAT which included: materials and procedures, approaches to constraining communication to verbal expressions and how to adjust individual task difficulty. A sample of 20 mild/moderate/severe aphasic patients took part in the study with symptom duration of greater than 6 months. All patients received the CIAT programme for 3 hours per day on 10 consecutive days in groups of 2/3. Ten patients, received all sessions from an experienced therapist. The other group of patients received sessions led by the trained layperson. During the first two sessions, laypersons were supervised by an experienced therapist. For the remaining 8 sessions, the trained layperson led the session with an expert therapist on hand nearby in case of major problems. Post-training, aphasia severity was reduced in both treatment groups according to language functions tests. There was no difference between the two groups, indicating CIAT therapy was successful in improving communication whether delivered by an expert therapist or trained layperson. It is important to note that experienced therapists were on hand to help (although not utilised in this particular study) and that the laypersons were patients' relatives who were chosen because of their motivation and availability.
This provides some evidence that highly motivated lay people can effectively deliver interventions, with close supervision by an SLT.

Bakheit (2007) undertook a prospective randomised controlled trial over a 5 year period to determine if more intense treatment has a significant effect on recovery from post stroke aphasia. One hundred and sixteen patients, who had just suffered their first stroke, were randomised to two groups. Forty-six received standard treatment which consisted of two therapy sessions of 1 hour per week for 12 weeks post-stroke. Fifty-one patients received intensive treatment of five 1 hour sessions per week for 12 weeks post stroke. The Western Aphasia Battery was administered at 4, 8, 12 and 24 weeks following treatment. Whilst both groups significantly improved, there were no differences between

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the two groups. However, the study findings suggest patients may not be able to cope with such intense treatment immediately post-stroke. Two patients withdrew from the standard treatment group compared with 9 in the intense treatment group. Additionally, only 13 of the 51 patients in the intense therapy group received 80% (i.e. 4 sessions per week for 12 weeks) of the prescribed therapy. NB patients who received less than 2 hours a week therapy (NHS group) did not improve to the same extent as the other two groups. This is important when thinking about commissioning resources. This study gives a cautionary note that while intensive therapy may be most effective, it may not always be in the best interests of the individual due to their overall health.

Basso (2005) reports the findings of a small case study on 3 pairs of patients matched in severity of aphasia. One from each pair received 'standard' treatment of 1 hour daily sessions for 6-20 months. The other patient in the matched pair received long and intensive therapy which consisted of 3-4 hours per day, 7 days per week over a period of 14-40 months. Patients receiving long and intensive therapy improved much more in daily use of language than those receiving standard therapy.

Computer based therapy

The delivery of speech language therapy by computer was examined in a number of studies. In one case, this was in the setting of a hospital or clinic, with time outside sessions to practice on the computer. However, two studies investigated the use of delivery therapy remotely via a computer and internet connection under the direct supervision of a speech and language therapist.

Aftonomos (Norwich & Grove, 1997) looked at use of a computer-based system at two clinics. Twenty-three patients with a wide range of deficits and aphasia types received therapy via the Lingraphica System (LG), a laptop computer platform with software that displays interactive icons that are semantically associated with over 2000 nouns, verbs, adjectives etc. All patients received 1 hour sessions with a therapist using Lingraphica. The duration of therapy was variable, ranging between 2-38.3 weeks (mean=16.2) with an average of 2 sessions per week. In between sessions, all but one patient had access to the computer-based therapy at home. Pre and post treatment tests demonstrated improvements on a number of language function outcomes. Usage data demonstrated patients used the system fairly intensively outside of the sessions with a mean daily usage of 2.04 hours/day (range was 0.14-6.47).
This study suggests that individuals have a positive response to computer based therapy, and are likely to make use of such resources.

Mortley (Wright et al., 2004) evaluated speech language therapy delivered remotely to 7 chronic aphasic patients who had difficulties in word retrieval. After receiving a home visit to plan initial therapy and load software/loan computer equipment with the first set of therapy exercises, all treatment was carried out remotely. Patients completed exercises and sent these to the therapist via the Internet, who set further exercises for completion. The therapist phoned each patient after looking at the completed exercises to discuss the patients' progress. This cycle continued for 3 months, after which a time a face-to-face assessment was completed followed by 3 further months of therapy. The average usage of the computer system was 2 hours 45 minutes per week; which is comparable to the RCSLT recommendation for patients with aphasia. In addition, the patients' ability to retrieve object and action names significantly improved and although patients were given the opportunity to request face-to-face time with the therapist if they wanted to, no one did. In terms of acceptability, the patients found this remote delivery of therapy a very positive experience. Wade, J (2003) et al interviewed 6 of the 7 patients who took part in the Mortley (Wright J et al., 2004) study to examine

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their experience of delivery of therapy in more detail. The patients' experience of remote-based therapy seemed entirely positive. There was a reported high use, usually a 1 hour session on most days. Partners valued the fact that the software could be used without them being present. Partner involvement during use of the computer was variable with one partner being present all the time, one not at all and 4 sometimes available and sometimes not. Despite the lack of face-to-face contact, all participants perceived the role of the therapist as crucial. This was especially valued when exercises were difficult. Participants listed a number of effects of therapy including increased ability on therapy tasks, positive effects on conversation and phone/computer skills. In addition, self-esteem and confidence improved and participants felt "more a sense of themselves". Participants expressed anxiety about cessation of therapy, with two believing they needed constant practice to stop deterioration. One feature of remote treatment valued above all else was the participants' control over timing and duration of practice.
This supports the use of computer based therapy in the patients own time, but emphasises the need for therapist involvement.

This therapy did save a lot of therapist time, 2 hours' therapist time per month compared with around 12 hours. However, it is important to remember this computer based therapy was tailor-made for each patient and there was still regular contact with the therapist. In addition, all 7 patients were motivated to take part in the study and over half had previous experience with computers. Nevertheless, it demonstrates that this type of therapy can be both accepted positively by patients and lead to significant language gains.

The studies into use of lay people, and computer based therapy, suggest that rather than being seen as 'alternatives' to therapy, these should be seen as resources available to SLT's, to enable them to make the best use of their time, both it terms of benefit to patient and cost effectiveness.

Alternative and Augmentative Communication

Alternative and augmentative communication (AAC) devices are used with individuals with aphasia and two studies investigated their effectiveness and usability.

Van de Sandt-Koenderman (2005) developed and evaluated a portable communication aid (PCAD) for aphasics to support communication in everyday life. The study showed that a select group of patients with chronic aphasia are able to acquire the necessary skills to operate the PCAD. The software ran from a portable device, and consisted of an empty vocabulary that can be filled with items that are personally relevant for each individual. The therapist and client chose relevant vocabulary using pictures, drawings, photos and text. This vocabulary can be used to create messages which are displayed by the device, with or without speech output. Twenty-two aphasic patients with relatively good auditory comprehension and limited verbal expression took part in the study. All had a specific communicative needs and a supportive partner. Each individual underwent training with a therapist to find out about their own specific communicative needs and set goals to achieve; to enable individual configuration of their device; to chose their vocabulary and learn how to operate the device within role play. Following training, all 22 participants could operate the device in the therapy sessions. Five patients were unsuccessful in using the device in real-life situations and 17 reported use of PCAD for at least one of their preset goals. Unsuccessful clients were younger than successful clients.

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Van de Sandt-Koenderman (2007) undertook a further study investigating the efficacy of the TouchSpeak system in improving outcomes. Thirty-four individuals with severe aphasia were given 12 hours vocabulary training over 10 weeks. The training focused on using the vocabulary of the device in specific day-to-day situations and included role play sessions and time to practice at home. Following training, around half of the participants could navigate the complete set of 176 buttons on the device. The average number of buttons created by participants was 159 (range 32-382). The patients' communicative ability was assessed in everyday situations pre and post training and was found to have improved significantly following training. User satisfaction was high with 70% of patients, 74% partners and 68% therapists rating TouchSpeak as good, very good or excellent. Seventeen participants decided to purchase their own device with TouchSpeak installed. At the 3-year follow-up, 12 of theses 17 participants were interviewed. Two still used TouchSpeak, one had never used the system, one had given up within a few weeks, and 8 had used the device for more than 6 months post training but didn't use it anymore. Reasons for non-use were that communicative ability had improved (6 patients) there were technical problems (7 patients) or the patient had a preference for other communicative strategies (4 patients).

AAC devices seem to require careful selection of appropriate patients, especially for long-term use.

Delivery and Format of Therapy

The delivery of therapy was looked at in one study in which an intervention delivered to a group was examined. The remaining studies looked at the efficacy of different types of aphasia therapy.

Elman (1999) examined the effects of treatment delivered in a group format for individuals with chronic aphasia. Twenty-eight aphasic individuals were assigned to an immediate or deferred treatment group. The immediate treatment group received 5 hours of group communication weekly for four months in the form of 2 and a half hour sessions on 2 days. Participants were split into groups of 7 according to severity of aphasia to enable matching with similar patients. These sessions included 30 minutes of social breaks. In total, participants received 32 sessions. The group communication treatment focused on improving the participants' ability to convey a message using whatever strategy was most useful, initiating conversation and increasing awareness of personal goals. The treatment mainly involved discussion around current activities and events in participants' lives or current news stories. Patients also participated in social games like Blackjack. The deferred treatment group first received 3 hours or more per week of social group activities of their choice, for example, art groups or support groups before receiving the group communication treatment intervention. Linguistic and communicative measures were taken at entry, 2 and 4 months of treatment and after 4-5 weeks of no treatment. The immediate treatment group scored much higher than the deferred treatment group on all measurements, with no decline in the follow-up period. The deferred group showed similar gains once they had received the group treatment intervention.

Worrall (2000) designed and evaluated a functional communication therapy programme called Speaking Out. Twenty aphasic patients, 12 months post-stroke, who had difficulty in daily communication, took part in the study. The Speaking Out programme consisted of 10 scripted modules covering topics such as managing finances, starting a conversation and using the telephone. For each module, they began with a trigger to raise awareness about the topic. Finally, towards the end, participants and volunteers plan some action that can be undertaken on the topic. The participants were split into Group A and Group B. Groups received either the Speaking Out programme first or took part in recreational activities (such as cards, crafts and gardening) for 1-2

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hours per week over 10 weeks. At the end of this period, participants were assessed using a set of measures that were also administered at the beginning of the study. Each group then received 10 weeks of the programme they had not been exposed to. This was followed by another assessment. Pre and post receiving the Speaking Out programme, both groups improved on the Western Aphasia Battery (ability to point to correct objects). In terms of significant improvements in conversation, Group B did show improvement following Speaking Out but Group A did not. Both groups showed change on quality of life measures (patients and spouses). However following the recreational activities, some of these improvements were also seen- indicating a possible placebo effect.

Barthel (2008) investigated the therapy effects of two types of intensive speech language therapy for aphasic individuals. Twelve patients were assigned to receive Model Orientated Aphasia Therapy (MOAT). MOAT is similar to CIAT in that it includes everyday therapy, shaping (increasing the level of difficulty of exercises gradually) and involvement of relatives. However, it contrasts to CIAT by using an individual setting offering patients a specific therapy based on their symptoms and disturbed level of language production. The approach is linguistic and focuses on language production. Data from the Meinzer (2005) study was used to compare the outcomes for patients receiving CIAT and CIATplus compared with MOAT. All patients received 30 hours of their designated therapy mode within 2 weeks in sessions lasting 3 hours per day. Language functions were assessed prior to treatment, after treatment and 6 months after and showed no differences between the CIATplus and MOAT modes of therapy. However, written language and perception of amount and quality of everyday speech (by patients and their partners) improved more for MOAT and CIATplus participants than those receiving CIAT.

Fillingham (2005) conducted a series of studies examining Errorful vs. Errorless therapy, culminating in a final study in 2005. Errorless therapy attempts to control errors made during therapy whereas errorful therapy does not attempt to control errors. In previous studies no difference in outcomes had been found between errorful and errorless therapy. The study was repeated a third time with slight modifications to the therapies administered. Seven patients who had word finding difficulties as a result of aphasia took part in the investigation. Errorful therapy consisted of providing a picture with the first phoneme and grapheme and asking the patient to name the picture. This process was repeated three times. During errorless therapy, patients were given a picture with its written and spoken name. The participant repeated and/or read the name three times. Each therapy session included 3 cycles of the items/pictures, which lasted around 25-40 minutes. Ten sessions of each therapy were given twice a week for 5 weeks. As found in the previous studies, errorless and errorful therapy produced equivalent results immediately post-therapy and follow-up. Non-language cognitive skills, for example problem solving skills and monitoring ability could predict therapy outcome.

Aftonomous (1999) evaluated the outcomes for aphasic patients receiving community-based treatment programmes, to see if these were comparable with effects reported in research. Patients with a wide range of types and severity of aphasia, who were mostly 6 months post stroke, followed 2 identical treatment programmes in California and Kansas. A detailed patient care algorithm was used to determine the clinical pathway for each patient and technology that provides access to an extensive toolbox of specially designed, interactive multimedia materials for patient use. Therapists were formally trained in how to administer this treatment programme and an online database provided easy access to patient details, their diagnostic assessment and their responses to treatment. The focus on treatment was to improve patients' functional communication outside of the clinic. Patients received individual 1 hour sessions with a speech and language therapist, with the

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overall mean number of sessions being 41.7 (range 10-132). The wide variability in number of session demonstrates the variety of types and severity of aphasia. Where appropriate, patients were set exercises to complete at home. Post-treatment, all patients with different types of aphasia had significantly improved in terms of language impairment and functional communication. Whilst this study has not been undertaken in experimental conditions and the effect /improvement could be due to other external factors than the treatment programme, it demonstrates in a real-life setting, treatment can be successful.

Summary

Speech and language therapy is effective for people with aphasia. There are features of therapy that may make treatment more successful, for example timing, intensity and involvement of family and friends. More intense therapy of longer duration results in greater gains for aphasic individuals. There seems to be little difference between different types of aphasia therapy. Family and volunteer involvement is successful and results in better outcomes for individuals with aphasia. Laypersons can be effectively trained to deliver some aphasia therapies. Novel computer-based therapies can reduce therapist time, are acceptable to patients and effective. AAC devices can be successfully used with aphasic individuals, some of whom may be more suited to the use of AAC devices. It is important to remember that therapy effectiveness strongly relies on patient participation and motivation. Most of the studies included in this synopsis included aphasic individuals who were motivated and willing to take part.

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Study	Country	Study design	Subjects	Intervention
Aftonomos, L (Norwich B and Grove N, 1997)	USA	Interventional study	23 chronic aphasic patients- range of types and severity of aphasia	Computer-based therapy. Software with interactive icons semantically associated with nouns, verbs and adjectives
Aftonomos, L (1999)	USA	Interventional study	60 chronic aphasic patients- range of types and severity of aphasia	Community-based treatment programme
Bakheit, A (2007)	UK	RCT	116 patients with acute aphasia following first-ever stroke	Intense therapy vs. standard therapy (Five 1 hour sessions per week vs. two 1 hour sessions per week, for 12 weeks)
Barthel, G (2008)	Germany	Clinical trial	12 patients with chronic aphasia- range of types and severity. [Subjects from Meinzer 2005 study used as comparisons]	Model-orientated aphasia therapy (MOAT): an intense mode of therapy delivered daily over a 2 week period.

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Study	Country	Study design	Subjects	Intervention
				Therapy delivered on an individual basis with task difficulty increasing gradually.
Basso, A (2005)	Worldwide	Literature review	Studies looking at intensity and duration of treatment	Intensity and duration of treatment
Cunningham, R (2003)	UK	4 case studies	4 aphasic patients and their 4 partners Severe expressive difficulty and moderate/severe comprehension difficulty	Supported conversation for adults with aphasia (SCA) with a friend or relative.
Elman, R (1999)	USA	Clinical trial	28 chronic aphasic patients –range of types and severity	Group communication treatment- therapy delivered to groups of 7 patients
Fillingham, J (2005)	UK	Case series	7 chronic aphasic patients- range of types and severity	Errorless learning (where errors are eliminated during therapy) vs. errorful therapy (where errors are not controlled during therapy)
Greener, J (1999)	Worldwide	Systematic review	12 studies	Formal speech language therapy Non-professional support Other support (non-speech and language focused)
Kagan, A (Clarke M et al., 2001)	Canada	RCT	40 aphasic patients and 40 volunteer conversation partners, paired Moderately severe-severe aphasia	'Supported Conversation for adults with aphasia' (SCA). Volunteer conversation partners received training in how to acknowledge and reveal the competence in adults with aphasia

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Study	Country	Study design	Subjects	Intervention
Meinzer, M (2005)	Germany	Interventional study	27 chronic aphasic patients- range of types and severity	Constraint-induced aphasia therapy (CIAT and CIATplus): Patients assigned to groups of 2/3 that took part in a communicative language game which consists of a set of pairs of cards with drawings on.
Meinzer, M (2007)	Germany	RCT	20 laypersons (Patients' relatives)	Layperson training to deliver CIAT
Mortley, J (Wright J et al., 2004)	UK	Case series	7 aphasic patients with difficulties in retrieving words	Computer-based remote speech and language therapy (i.e. therapist in contact via phone and email)
Robey, R (Beukelman D R and Mirenda P, 1998)	Worldwide	Meta-analysis	55 studies investigating speech language therapy for aphasia	Investigating the effect of the amount of treatment, type of treatment, severity of aphasia, type of aphasia on outcomes for aphasic patients.
Van de Sandt-Koenderman, M (2005)	UK/Portugal/Netherlands	Interventional study	22 chronic aphasic pateints. Relatively good auditory comprehension, limited verbal expression.	Portable communication aid (PCAD) called TouchSpeak
Van de Sandt-Koenderman, M Van de Sandt-Koenderman, M (2007)	Netherlands	Interventional study	34 chronic aphasic patients- severe aphasia	Portable communication aid (PCAD) called TouchSpeak
Wade, J (2003)	UK	Qualitative study	7 aphasic patients with difficulties in retrieving words	Computer-based remote speech and language therapy (i.e. therapist in contact via phone and email)
Whurr (1992)	Worldwide	Meta-analysis	45 studies investigating	Description of what

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Study	Country	Study design	Subjects	Intervention
			speech language therapy for aphasia	constitutes 'typical' speech and language therapy for aphasic patients
Worrall, L (2000)	Australia	Interventional study	20 chronic aphasic patients- range of types and severity	Functional communication therapy programme, called Speaking Out, delivered by laypersons.

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