Measurable Outcomes in the Treatment of People with Severe Communication Impairments (Complex Communication Needs)

A Working Paper by Jane Remington-Gurney,
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Summary:
Two outcome measures have been developed by the author over the last two years in acknowledgment that some clients with very severe communication impairments are able to demonstrate progress and benefit from regular speech therapy, but progress is slow and change is subtle. The first measure developed relates to the clients inability to learn sign and speech but to learn or re-learn natural gesture and paired vocal signals. The second measure relates to the need to record and measure communication partner competencies by people who support such clients.

Background:
Increasingly in my work there is a need to produce measurable outcomes in order to secure a client funding to either continue therapy, maintain the level of support or increase the intervention provided. The nature of my work is, and has been for over twenty years, to provide communication therapy to those who have severe impairments in spoken and non-spoken communication. The severity of the impairments is such that most clients would either fall on the scale of below 2 standard deviations on formal testing or fail to meet the criteria for formal testing. In some cases there simply does not appear to be the formal testing available to either measure function or demonstrate the subtle changes in ability that occur over a course of intervention. Many of the clients I see do not 'qualify' for government funded therapy as the nature of their disability is so severe, there are often no resources to meet the clients need or there may be resources but therapists often do not feel they are able to assist. My role in providing intervention is to attempt to improve the quality and quantity of the client's communication whilst also developing best conversation and interaction from communication partners. I do this in recognition that the World Health Organisation site the act of being 'incommunicado' or without speech as the worst form of human torture, that the act of communication is abasic human right and that communication is a gift we should never take for granted.

Keith Andrews (BMJ 1999) writes that "Any motor activity, no matter how slight, can be used for communication". My role therefore involves determining which muscles the client appears to have voluntary control over and whether the movements can be shaped for communication purposes.

The Development of the Two Outcome Measures:
Two outcome measures have been developed and are sited at the end of this paper for readers to photocopy, try and provide me with constructive feedback. The measures will also be found on the Options website www.optionsctc.com
The measures are:

1. Gesture and Speech A.
2. Gesture and Speech B.
3. Communication Partner Training Competencies

Development of the First Outcome Measure:

In recent years I have developed a Gesture and Speech Program and used this with clients and their care providers to establish a non-verbal system of signals that can be interpreted by the naïve communication partner. The readability of the signals is high because the signals align themselves closely with natural body language and gesture.

Because of the nature of the disability clients present with, I have written motor prompts which instruct the client on how to perform the signals. These motor prompts reflect for the client how he has to go about making a gesture rather than what it is he has to do. For example, the signal of raising the thumb ("thumbs up") to indicate 'good' seems to be more successfully executed if the motor prompt is "thumb back". The reader may like to try executing some of the signals contained in the Gesture and Speech Programs A and B to determine for self, which instruction is easiest to follow…especially if proprioceptive and spatial difficulties were present.

Originally the Gesture and Speech Program was developed with children in mind. These children had developmental disabilities such as autism and were not successful in learning conventional signing. Five movement disturbances are included in the assessment as sited by Donnelan and Leary (1997). These are initiating, stopping (perseveration), continuing, sequencing and switching. The nature of the presenting movement disturbance often dictates the teaching strategies used. For example, someone with 'stopping' difficulties will need hands on inhibition when the signal is shaped and perhaps some help with timing. Some clients were finding it easier to make static rather than dynamic signals and therefore signals listed are coded accordingly.

This raises the issue of what is a functional lexicon and how is it determined. It isn't the scope or purpose of this paper to discuss issues that have arisen in determining and scripting signals to compile a functional lexicon. Suffice to say, attention does need to be paid to what the client can signal, the positive emotional feedback he receives for scripted conversations using signals he can make rather than basing a lexicon on what the environment requires in the immediate term. In the work with children close attention is paid to teaching natural gesture rather than Auslan or Australian sign wherever possible (often by adapting action songs). See 'Songs to Learn By' on the Options web site www.optionsctc.com For example, teaching head nodding and shaking for yes and no and raising shoulders for "I don't know". Also, if a child is able to use the Auslan sign for "toilet" ***but*** uses this for a multitude of "escape" words, then attention is paid to teaching gestures for the words that are really intended i.e. I want a break (wait), I want to play (play/point to object), stop (stop), go away (go). An assessment of the clients motor skills (hand and head movements), assessment of functional need and an ability of the therapist to use a teaching style which reflects the sensory-motor needs of clients is integral to success.

It soon became apparent that the clients who presented with catastrophic brain damage arising from acquired brain injury may also benefit from this intervention. The program showed significant implications for this group primarily because the client group was more responsive to *regaining pre-trauma communication modes* than establishing or learning new methods of augmentative communication. One client in particular who had been receiving conventional therapy for speech recovery was being shown the augmentative communication devices available and uttered his first verbal response to interactions…a

resounding “no!”. He then went on to use the gesture program with vocal re-training and is now verbal.

In both the acquired and the developmental populations it was also apparent that there needed to be a measure of the level of support offered in order that the signal be executed and a measure of the time taken to execute the signal. The following method of coding performance was developed.

PM	physical manipulation
TC	touch cue to limb
AC	air cue
SO	spoken directive only
NR	no response in 10 seconds
VD	very delayed response in 5-10 seconds
D	delayed response 3-5 seconds
I	immediate response in less than 3 seconds
C	consistent (3/3) responses
IC	inconsistent

As some clients may indeed learn or relearn some verbal language to accompany the gestures, a list of functional vocalisations were paired with as many of the gestures as possible. I have used two versions of the Gesture and Speech Program. The first (A) seems more appropriate for the very severely impaired client whilst the second version (B) is for the client who is able to produce sounds more easily and needs less motor-based prompting.

The verbal prompts listed are the ones which I have found most helpful to date. I have found it interesting that I have often changed from using ‘hand’ and ‘arm’ in the prompts to using ‘wrist’. It seems very important to spend time actually thinking and experimenting with how a gesture is executed and from which point on a limb. Also, some of the motor prompts will need modification depending on the client’s limb position at rest. I would strongly recommend working alongside an experienced physiotherapist for this work. Most clients benefit from deep massage and sensory work to the limb prior to the program being used in session.

Sometimes I have listed more than one vocalisation as some clients would be able to achieve more complex vocalisations than others. In all cases, the PROMPT method was used at this stage. Refer to www.promptinstitute.org for more information about this technique as it does require specific hands on training from a PROMPT Instructor.

Very often the verbal prompts are given and a functional vocalisation provided to pair with the signal even though the client may not be able to produce the vocalisation themselves. The modeling is provided and has a use in demonstrating to observers the purpose of the activity. Example “squeeze my hand, it’s like holding a spoon (comb, pen, cigarette) again, don’t let go….all done, hand soft, let it go, phew that was great”

I have found that using the Gesture and Speech Program has been of enormous benefit to clients, their families and myself. We have all gained a greater appreciation of the complexity of the act of communication and in doing so, I am sure that the quality of our interaction as communication partners has been improved.

The Development of the Second Outcome Measure – Communication Partner Training:

The Gesture and Speech Program was used with some clients who received reviewed funding from agencies such as Insurance Companies. Whilst the measurable outcomes through use of the coding structure were helpful, there emerged a need to measure the competencies of the care providers. Funding was being provided to clients for the skills they were re-learning and demonstrating. Funding was also being provided for the skills care providers were able to demonstrate on the job. I was therefore asked to develop measurable outcomes for the care providers for two clients I supported.

I have done this in the broad sense and have hopefully addressed skills and outcomes which, in my experience, are fundamental to augmentative communication awareness and use. Ten skill areas in communication partner training, documented in line with 'Train the Trainer' criteria and used to report back to funding bodies on the formal outcomes of partner training programs are sited at the end of this paper. Two sections have been allowed for recording participant's performance so that either one evaluator can record over two time periods or two independent evaluators can be used for cross referencing.

The ten skill, or outcome areas are reflective of what I have personally found to be valuable skill areas for people to learn. There appeared to be very little data available for reference in this area. The book "Augmentative Communication in a Medical Setting" was helpful but very specific to the adult CVA population. The skill areas I have selected are aimed to be general enough that they provide a broad appreciation of conversation skills, augmentative communication and the rights of people with disabilities.

The ten outcome areas are:

1. To discuss the role of augmentative communication.
2. To provide information about the designated client's disability.
3. To demonstrate best practice in physical assistance.
4. To demonstrate best practice in access assistance.
5. To demonstrate best practice in conversation.
6. To demonstrate design of communication boards.
7. To create a client specific scrapbook.
8. To demonstrate the role of communication advocate.
9. To demonstrate effective management of the environment to ensure optimal communication/learning from the client.
10. To provide written information pertaining to assisting others as communication partners.

The reader should note that Outcome 6 does make reference to the use of the EyeCom system of communication. Whilst I appreciate that clients may seldom use this method of communication it does provide an excellent vehicle for teaching some of the most important augmentative communication interaction strategies i.e. the time needed to plan and execute clear movements, the need to ask clear questions, the pros and cons of abbreviating and the need to position self and equipment appropriately.

In using the communication partner competency sheets, an important observation has been made. This can be just one more piece of documentation that care providers are required to participate with. They may not receive any additional kudos, salary or even paid time to complete the competencies. If funding is not available for the face to face training and the materials to support the care providers develop their competencies then this can be an additional frustration for all concerned. There would surely be a need for agencies who support people with complex communication needs to have formally recognized competencies, established and regularly reviewed.

Perhaps the competencies I have sited could form the basis of a multi-stage training program for care providers. This training may include the fundamental ten outcomes I have sited and then move on to demonstrated competencies in things like communication board design, use of Makaton/Key word signing, use of specific electronic communication devices, assisting AAC users in the classroom/workplace etc. Food for thought and hopefully ideas for someone to act on.

Summary:
I would like to be able to share this information with my colleagues and have therefore also made it available on my web site. I run a busy private practice and have very little time to document information and approaches we find helpful in our clinical work here at Options. I would be delighted to receive feedback from readers and maybe someone is in a position to expand on this work and develop it usefully in the community.

Readings and References:
Adamovich,B.B., J.A.Henderson, and S. Auerbach 1985. Cognitive Rehabilitation in Closed Head Injury Patients: A Dynamic Approach. Boston: College-J Hill press. Augmentative Communication In The Medical Setting. Editor: Kathryn M. Yorkston PhD, CCC-SLP 1992

Andrews, K., Murphy L., Munday R., Littlewood C. Misdiagnosis of the Vegetative State: Retrospective Study in a Rehabilitation Unit. British Medical Journal. July 1996. 313: 13-16

Assessment and Workplace Training BSZ98. Australian National Training Authority.1999

Basil, C. 1992. Social Interaction and Learned Helplessness in Severely Disabled Children. Augmentative and Alternative Communication Vol. 8 No 3 P. 188-200

Beukelman D.R. 1986. Evaluating the effectiveness of intervention programs in Augmentative Communication: An Introduction. Edited by Sarah Blackstone and D.M. Bruskin American Speech language Association.

Culp,D.M. 1987. Outcome Measurement: The impact of communication augmentation. Seminars in Speech and Language. 8:169-85.

DeRuyter,F. and M.R. Becker. 1988 Augmentative Communication: Assessment, system selection, and usage. Journal of Head Trauma Rehabilitation.3:35-44

Downey,CA: Professional Staff Association of Rancho Los Amigos Hospital. Supported Conversation Partner Training. Video and Training Manual

Dunst C.J., Lowe L.W. From Reflex to Symbol: Describing, Explaining and Fostering Communication Competence. Augmentative and Alternative Communication Vol2 No1 1986 P11-17.

Goosens, C., and Crain, S. 1986. Augmentative Communication Assessment Resource. Lake Zurich, IL. Don Johnson Developmental Equipment.

Hayden, D., (1994) the PROMPT System: Therapeutic Intervention Hierarchy. A Systems Approach. The Prompt Institute, Santa Fe, NM.

Keenan J.E. Barnhart K.S. Development of Yes/No Systems in Individuals with Severe Traumatic Brain Injuries. AAC 1993 Vol 9 September.

Life Space Access profile. Assistive technology Assessment and Planning for Individuals with Severe or Multiple Disabilities. 1995.

Levin,H.S.,.,A.L. Benton and R.G. Grossman. 1982. Neurobehavioural Consequences of Closed Head Injury. New York: Oxford University Press

Light J., Beesley, M and Collier B. Transition Through Multiple Augmentative and Alternative Communication Systems: A Three-Year Case Study of a Head Injured Adolescent. AAC 1988.

Movement and Action in Learning and Development. Ida J. Stockman. Elsevier Press.2004.

Movement Differences and Diversity in Autism/Mental Retardation. Appreciating and accommodating People with Communication and Behavior Challenges. Donnelan A.M. Leary M.R. 1995 DRI Press.

Planning To Move, Moving To Plan Dyspraxia Support Group of New Zealand. 1997.

Remington-Gurney.J. 1988 Augmentative Communication Needs of the Head Injured Client. Australian Association of Speech and Hearing Brisbane 1988.

Sarno,M., A.Buonaguro and E. L of verbal impairment in closed head injury patients. Archives of Physical Medicine and Rehabilitation 67:400-405.

Spanbock P. Understanding Head Injury From The Families Perspective. Cognitive Rehabilitation. March/April 1987. P12-14

Szerkeres,S.F., M Ylvisaker and S.B. Cohen. 1987 A Framework for Cognitive rehabilitation therapy: A Framework for Intervention. In Head Injury rehabilitation: Children and Adolescents. Edited by M. Ylavisaker, 219-246. San Diego. CA: College Hill Press.

Tadir M., Stern J.M. The Mourning Process With Brain Injured Patients. Scandinavian Journal of Rehabilitation Medicine Supplement. 1985. 12:50 P.50-52

Vanderheiden G. Service Delivery Mechanisms in Rehabilitation Technology. American Journal of Occupational Therapy. Vol 41 No 1 Nov.1987 P.703-710

www.un.org/esa/socdev/enable/rights/ahcstatusneg/htm
www.promptinstitute.org
www.optionsctc.com

Options Communication Therapy Centre is a private speech pathology practice offering specialist services for people of all ages who have complex communication needs.
Jane Remington-Gurney is the director of Options and the principle speech pathologist. She has over thirty years experience in augmentative communication and has trained in augmentative strategies including Makaton, Blissymbolics, Amer-Ind, Facilitated Communication, PROMPT, and Cued Articulation.

The Options Communication Therapy Centre
Natural Gesture and Speech Program A.

An important component in communication programs for people with complex communication needs.

Response Codes

PM: Physical manipulation	TC: touch cue	AC: Air cue	SO: Speech only
I: Immediate response	D: delayed 3-10 secs.	VD: Very delayed 10-30 secs.	
NR: No response	C: consistent 3/3 responses	IC: Inconsistent	

TASK	TO LEAD TO…	VERBAL PROMPTS	RESPONSE	COMMENTS
Head Head up and down	Nodding 'yes'	Look at your knees, head up Yeh Uh Uh		
Head side to side	Shaking 'no'	Look to the side, other side, look at me "no"		
Head tilted to shoulder	Question i.e 'what did you say?'	Ear to shoulder. eh?		
Shoulder Shoulders forward	Reaching or assisting with postural adjustments	"h" sigh "hey"		
Shoulders up	"I don't know"	Shoulders up (time the co-active shaping in time with up(don't)+down(know)		
Arm Left Arm up	I know! I need attention!	Wrist up, pull/push up		
Left Arm to me	Reach for choice or handshake	Wrist push, use your shoulder now, push forward		
Left arm push to side	Go away	Wrist, push away, touch me, push me away		
Right Arm up	I know! I need attention!	Wrist up, pull/push up		
Right Arm to me	Reach for choice or handshake	Wrist push, use your shoulder now, push forward		
Right arm push to side	Go away	Wrist, push away, touch me, push me away		

Hand Squeeze and release grip of my hand-left	Hand shake Holding things	Fingers down and tight, hard, squeeze…hold on…now soft hand, let go, sigh		
Turn wrist left	'maybe' 'bad'	Wrist over, see your palm? Now over again, other way, see your little finger nail?		
Left hand up	Stop/bye/hi	Wrist down, hand up		
Make a fist left hand	Angry	Fingers in, feel your nails in your palm, tight		
Squeeze and release grip of my right hand	Hand shake Holding things	Fingers down and tight, hard, squeeze…hold on…now soft hand, let go, sigh.		
Turn wrist right	'maybe' 'bad'	Wrist over, see your palm? Now over again, other way, see your little finger nail?		
right hand up	Stop/bye/hi	Wrist down, hand up.		
Make a fist right-hand	Angry	Fingers in, feel your nails in your palm, tight		
Fingers/thumb Move left thumb up	'good' 'bad' 'finished'	Thumb back		
Move left thumb down	'bad'	Turn wrist (thumb back, turn wrist)		
Move left index finger	Pointing	Pointing (index) finger) stretch (away)		
Move right thumb up	'good' 'bad' 'finished'	Thumb back		
Move right, right thumb down	'bad'	Turn wrist (thumb back, turn wrist)		
Move right index finger	Pointing	Pointing (index) finger) stretch (away)		

Breath (jaw) Sigh	Relaxation and self control			
Voice	Vocalisation intent	PROMPT Little noise		
Eyes Close eyes	Tired	Close eyes		
Face Sad	Sad	Soft face		
Angry	Angry	Tight face Feel air on teeth		
Happy	Happy	Tight lips Stretch lips		
Bored	Bored	Soft face Open mouth Sigh		
Tired	Tired	Eyes closed Sigh		

The Options Communication Therapy Centre
Natural Gesture and Speech Program B.

An important component in communication programs for people with complex communication needs.

Response Codes

PM: Physical manipulation TC: touch cue AC: Air cue SO: Speech only
I: Immediate response D: delayed 3-10 secs. VD: Very delayed 10-30 secs.
NR: No response C: consistent 3/3 responses IC: Inconsistent
D stands for Dynamic (gesture made with movement) and the S for Static

Gesture:	**Action:**		**Sound/ Word:**	**Comments:**
Toilet	Point to pelvic area	S	no sound or oo	

Tummy ache	Two hands across tummy. Lean forward.	S	oh!	
Me	Point to chest	S	Me	
You	Point to person	S	You	
Thirsty	Point to mouth (Finger inside mouth)	S	Mm	
Stop	Hand flat, up	S	Hey!	
Tired	'prayer hands' to side of tilted head	S	Sh,mm	
Good	Thumbs up	S	Good	
Bad(no good)	Thumbs down	S	Bad	
Ok	Tilt head	S	Oh-ay	
Noisy	Hands to ears	S	Hey!	
Quiet	Finger to closed lips	S	Sh	
Hungry	Flat hand to tummy, move in small circles	D	(mmm or) hungry	
No	Shake head	D	No	
Yes	Nod head	D	yes (yeh)	
Go	Hand swept sway from body	D	Go	
Talk	Finger to mouth and then push away	D	Talk	
Hi/bye	Wave	D	Hi/bye	
Let's play	Take persons hand	D	Ay	
Please	Take persons hand	D	Ee	
Wait	Two hands patting air in front of body	D	Wait	
Happy	Clap hands	D	Happy	
Maybe	Palm down, flat hand rocked side to side	D	Maybe	
Pain	tight, tight face tight eyes	D	oo,oo	
Sad	Facial expression	D		
Angry	Fist up	D	Angry, rrr(growl)	
Get it for me	Hand gesture to item and returned to 'me'	D	Me	
Come	Hand gesture to person and returned to 'me'	D	Come	
I know	Hand up	D	I know	
Finished	Thumbs up and rock side to side	D	done	
Phone	Fist shaped hand to ear	D	phone	
I don't know	Shoulder shrug	D		
I want to spell	Repetitive pointing movement in space	D		
More	Hand cupper to chest	D	more	

	and pulled away from chest a few inches			
Help	Two hands clasped and pushed away from body	D	help	

Options Communication Therapy Centre
Communication Partner Training

Name of Trainee:

_____

Supervisor:

_____

Date evaluation commenced:

_____

Date evaluation completed: _____

C = Competent

NYC = Not Yet Competent

Comments and Recommendations:

_____

_____

_____

_____

Outcome 1: To Discuss the Role of Augmentative Communication

Assessment Criteria:	Rating and Date:	Rating and Date:	Comments:
1. Explain how communication is multimodal.			
2. Discuss the possible use of two visual and two manual communication systems.			
3. To explain the difference between co-active and independent movement.			
4. To explain the difference between high and low technological equipment.			
5. To identify two reasons why a client with an acquired brain injury may differ in response to augmentative communication compared with a person with a developmental disability.			

Outcome 2: To Provide Information About the Designated Client's Disability

Assessment Criteria:	Rating and Date:	Rating and Date:	Comment:
To read information provided by specialists and team members.			
To explain key concepts relevant to client's condition in own language.			
To identify when key deficits contribute to communication breakdown.			
To discuss how the patients disability impinges on whole of family relationships.			
To discuss the role of four key team members in the client's intervention rehabilitation process.			

Outcome 3: To Demonstrate Best Practice in Physical Assistance

Assessment Criteria:	Rating and Date:	Rating and Date:	Comment:
To identify the primary, presenting movement disturbances.			
To demonstrate accommodations for the prevailing movement disturbances.			
To discuss the objectives of 'good positioning'.			
To demonstrate 'good' positioning strategies during interactions.			
To recognise the need to consult specialist for assessment and intervention for movement difficulties.			

Outcome 4: To Demonstrate Best Practice in Access Assistance

Assessment Criteria:	Rating and Date:	Rating and Date:	Comments:
Apply key points of positioning to optimize access to a communication device in terms of:-			

-Placement of device -Positioning of partner and user -Height of working surface			
Demonstrate knowledge of factors that will influence consistency in access efficiency.			
Explain the difference between direct and indirect access.			
Identify two barriers and two catalysts to access efficiency.			
To recognise the need to consult specialist for assessment and intervention for access problems.			

Outcome 5: To Demonstrate Best Practice in Conversation

Assessment Criteria:	Rating and Date:	Rating and Date:	Comment:
To provide positive verbal coaching to user.			
To provide motor prompts to assist access.			
To provide sufficient time for the client to respond.			
To identify factors that adversely affect the client's ability to respond in a given interaction.			
To demonstrate conversation using shared routine of Initiation+Response and (Feedback)			

Outcome 6: To Demonstrate Design of Communication Boards

Assessment Criteria:	Rating and Date:	Rating and Date:	Comment:
To design a three unit communication display for choice making using direct access.			
To demonstrate use of an EYECom alphabet display for eye point communication.			
To demonstrate design			

of a business card directory style communication wallet for a literate user.			
To demonstrate design of a business card directory style communication wallet for a non-literate adult user.			
Establish a shared communication system of augmentative communication strategies across two settings.			

Outcome 7: To Create a Client Specific Scrapbook

Assessment Criteria:	Rating and Date:	Rating and Date:	Comment:
To select appropriate photos and mementos for a scrapbook that will enable others to gain an insight into the person's life and personality pre-trauma.			
To involve the person in the selection of photos to adhere to the scrapbook.			
To write appropriate captions in the client's voice (first person) to accompany the photos and reflect an appreciation of what the client voice may be.			
To display the photos in a meaningful and chronological way.			
To demonstrate use of the scrapbook when meeting new people or chatting with friends.			

Outcome 8: To Demonstrate The Role of a Communication Advocate

Assessment Criteria:	Rating and Date:	Rating and Date:	Comment:
To demonstrate awareness of the rights of the person to communicate.			
To demonstrate ways of enabling the user to be as fast as possible with their			

communication without risking loss of clarity or increasing ambiguity.			
To identify when a communication breakdown occurs in an observed interaction and why.			
To provide sensitive feedback to naïve communication partners when communication breakdown occurs.			
To demonstrate constructive feedback and comment to specialists when appropriate and timely rather than when requested.			

Outcome 9: To Demonstrate Effective Management of the Environment to Ensure Optimal Communication/Learning from the Client

Assessment Criteria:	Rating and Date:	Rating and Date:	Comment:
To demonstrate understanding of why communication equipment must always be accessible and in operational working order.			
To demonstrate ability to operate communication equipment.			
To demonstrate ability to make changes in the environment to best suit the client's sensory/motor needs.			
To explain why it may be necessary to assign a designated time for specific conversation topic or discussion.			
To identify two factors that may need addressing in a scenario where a client is anticipated to interact in a non-routine environment i.e. at the dentist/doctors/presentation evening/restaurant.			

Outcome 10: Provide Written Information Pertaining To Assisting Others as Communication Partners

Assessment Criteria:	Rating and Date:	Rating and Date:	Comment:
To list five team members and their roles.			
To write a SMART Goal (specific,			

meaningful, achievable, realistic time-framed) for the client.			
To write a SMART goal for self to acknowledge current practice and future needs of self.			
To write a cheat-sheet of five one line helpful strategies for naïve communication partners.			
To write a brief summary of client's performance on a given day to illustrate achievements.			