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A Survey of Australian Human Services Agency Software Usage

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ABSTRACT

Human Services agencies use a wide range of software systems to manage caseloads, maintain records, deliver services to clients and for inter-agency communication. Some systems are generic, such as Word or Excel, while some are specialised to the organisation, such as specialised databases for tracking case notes. Some software systems are shared across organisations. We surveyed nearly forty Australian Human Services agencies to ascertain the range of software currently in use by agencies and their opinions on it, with a view to identifying promising new Human Services applications. We interviewed representatives from a selection of smaller agencies. This resulted in detailed feedback on key issues to consider when developing and deploying new Human Services software.

Keywords: human services software survey, case notes management, inter-agency collaboration, client confidentiality and privacy.

INTRODUCTION

We wanted to ascertain the current state of software usage in Australian Human Services agencies and identify key opportunities for development. This was motivated by our experiences working in the Human Services domain, earlier work developing niche Human Services software systems and our prior research on innovative systems in Health IT (Khambati et al, 2009). There are a range of challenges to providing appropriate IT solutions to Human Services organisations. However it was unclear what the current state of practice is in using software to support Human Services agencies in Australia, how Human Services professionals themselves use and feel about the support of their current software solutions, and what key opportunities exist for new software solutions.

In this article we describe a survey of software usage in thirty-eight representative Human Services agencies We followed up our survey with face to face interviews with six agencies to help explain some of our survey findings. We summarise results of our survey, interviews with agency staff, and discuss some key implications from our survey and interviews for future Human Services agency software systems.

METHODS

To carry out this research we first reviewed a range of existing software systems for Human Services agencies, identifying current capabilities and features. We then surveyed a wide range of agencies, thirty-eight in total, asking about their current software application capabilities, feature gaps and desired new features. From this we identified a broad range of current Human Services software features, current usage and potential opportunities. We interviewed a small number of staff members from six agencies to further identify current software usage practices and possible future needs.

EXISTING HUMAN SERVICES AGENCY SOFTWARE SYSTEMS

In Australia, a number of systems are in use that have been developed both overseas and locally. Standard features include ability to record case notes, generate reports and calendars. Some systems are highly configurable while others are not. Some support inter-agency access while others are exclusive to one agency. Some serve providers only, others allow client interaction through web access and some serve client needs alone. We conducted a detailed review of over two dozen systems in use in Human Services agencies and related fields in mid-2010. Details of this review can be found in Grundy & Grundy (2011). Briefly, representative examples include: Penelope (Athena Software, 2010), a web-based system with on-site or off-site hosting; Tapestry (VisionLink, 2010), focusing on multi-agency partnerships; and Social Enterprise Management (SEM) (Curam, 2010), providing caseload management and self-service solutions for clients. As Human Services agencies often manage sensitive information, remote access and self-service require best-practice user identification and security management.

As our study was conducted in the State of Victoria, we also reviewed specifically Victorian solutions: CRISSP, developed for the non-government community services sector by the Victorian Department of Human Services (DHS, 2010), enables clients to interact with several agencies through a single website; Carelink+ (Icon Global, 2006) provides workload planning, reporting, alerts and reminders, individual permissions to different areas and remote connection; and HACCPAC supports the administrative needs of smaller Human Services agencies (Vada, 2006).

Video conferencing is used by some agencies in client and/or staff interactions to help people who are isolated. Various forms of 'E-therapy' are already in use in Australia and elsewhere. Jacmon et al (2009) showed that, combined with face-to-face interventions as needed, online therapy shows promising results. Security and privacy are key issues that need to be addressed with such systems. Virtual psychiatric clinics provide for diagnosis, treatment and monitoring of patients with mental health concerns, some with the option to enrol in free treatment programs or online therapy (Klein et al, 2010).

SURVEY OF HUMAN SERVICES AGENCY SOFTWARE USAGE

We wanted to obtain broad, collective feedback from Human Services workers to identify current software use, potential barriers to new software adoption and to ascertain any other issues we had not identified in our review of existing systems. We identified fifty agencies to invite to participate in our on-line survey. These were located via web searches, service directories and governmental listings. We asked a range of questions about software use and key agency tasks currently supported or that might be supported by software[1]. Thirty-eight responses to our invitations were received over a two week period in September and October 2010. Respondents were invited, on completion of the survey, to contact us if they were interested in participating in a follow-up face-to-face survey. Six agencies volunteered to participate in an interview. Please note that four agencies did not complete the survey online but emailed selected feedback directly to us, reported with the interview comments. Most respondent's definition of 'software' was quite narrow and limited to programmes that ran on a laptop or desktop computer i.e. not on tablets, smart phones, or using 3G technology.

[1] Approved by Swinburne University of Technology Human Research Ethics Committee

Following our online agency survey we obtained interest in face-to-face interviews from six diverse Human Services agencies[2]. To protect their anonymity, we recount only that these are a good mix of representative agencies from the Human Services sector. One of the researchers met with each agency representative at their premises and conducted a detailed interview. Most interviewees were managers of sections of the agency. Our intention was to explore in more detail particular agency software usage, potential usage, reaction to our possible future usage scenarios and to identify and discuss particular issues of software usage.

Agencies Surveyed

We attempted to cover a broad range of agency sizes and type, general services, specialised services and a representative range of Human Services areas, shown in Table 1. Those who answered 'other' include migrant and refugee settlement services, hospice and palliative care services, homelessness services, disability services, family violence prevention, HIV and AIDS services church based pastoral services and multi-service agencies. A balance of different sized agencies was achieved. Agencies were grouped as smaller agencies (less than 20 employees), middle sized agencies (20-100 employees) and larger agencies (more than 101 employees), Table 2. Agency client bases ranged from small to very large, Table 3.

TABLE 1. Which service sector is the primary focus of your agency?

Child/Youth/Family	Mental Health/ Addictions	Aged Services	Counseling	Housing/ Food or Resource Provision	Medical Support	Other
10 (29%)	5 (15%)	3 (9%)	4 (12%)	1 (3%)	0	11 (32%)

TABLE 2. How many people work in your agency?

less than 20	21-50	51-100	more than 100
12 (35%)	10 (29%)	3 (9%)	9 (26%)

TABLE 3. How many clients does your agency actively engage with at any one time?

less than 20	21-50	51-100	more than 100	I don't know
0	7 (18%)	4 (11%)	20 (53%)	3 (8%)

Current Software and Technologies in Use

Agencies used a significant diversity of software. We asked about their use of common Human Services computer systems available to Australian agencies, including CRISSP (three use), CareLink (3), Connected Care (1), Uniti, Penelope, Tapestry and Curam Software (which none claimed to use). Nineteen agencies indicated "Other" packages in use. Six respondents did not know what system their agencies used. Although we had included as answers what we understood to be the major software systems available to Human Services in Australia and Victoria, our results suggest a number of smaller niche market vendors exist and many agencies use only standard Microsoft or similar packages. None indicated use of software that did not involve the use of a desktop/laptop i.e., none used software that was

[2] Interview process and instruments approved by Swinburne University of Technology Human Research Ethics Committee

specific to the use of tablets, smart phones or 3G technology. All of our interviewed agencies found the standard Microsoft software sufficient for most of their software needs. Their systems had not been chosen for any particular reason other than that it was easy to access, familiar and served their day-to-day needs. None of the interviewed agencies currently used a system that enabled access by more than their own agency.

Participants were asked to rate the software their agency uses and their personal comfort with potentially extending the agencies use of software. The majority of participants found their software easy to use though results were fairly evenly divided over all possible results when asked if the system met the needs of the agency, Table 4. A significant majority indicated that there were additions they would like to see to the system and almost all were comfortable with the agency extending their use of computer technology.

TABLE 4. Rate software that your agency uses

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
I find the system easy to use	7 (21%)	14 (41%)	2 (6%)	6 (18%)	2 (6%)
The system meets our needs as an agency	4 (12%)	9 (26%)	5 (15%)	4 (12%)	7 (21%)
There are additions to the system I would like to see	9 (26%)	12 (35%)	6 (18%)	0	2 (6%)
I am comfortable with the idea of extending our agency's use of computers	13 (38%)	14 (41%)	2 (6%)	0	1 (3%)

TABLE 5. Storage of case notes and client consents

	Stored on computer systems	Stored in paper files	Some are stored on computer systems, others in paper files	Other
Case notes	11 (32%)	9 (26%)	12 (35%)	2 (6%)
Consents	2 (6%)	24 (71%)	7 (21%)	1 (3%)

As shown in Table 5, 71% of agencies preferred to store consents in paper files rather than on the computer, 32% used computer storage though twelve agencies used a mixture of both methods. The major reason for notes being stored in paper files was the need to obtain signatures that could not currently be collected using computer-only files (8). Other reasons given were difficulties managing agency server space (4), literacy difficulties among clients making it easier for clients to handwrite (2), some agencies did not have the technology to use computer consents (2), it was more cost effective to use paper files than to purchase a new system and then have to take the time to train staff (2), some processes required a physical client signature and some felt that computer storage was less secure than using a paper file (3). Several agencies (3) indicated that they did not see any benefit to using a computer system to store notes and consents, some felt access to notes for audits was easier using paper files and some found paper files generally gave easier access to notes – particularly when the computer network was down. Two agencies were not computerised but indicated an interest in moving from a paper based to computer based storage system.

There was a degree of caution expressed regarding the ability to link multiple agency data for privacy reasons and uncertainty where sharing boundaries should lie. For agencies to use such a system, there would need to be strong reassurance that information was secure and that what is shared with whom can be clearly defined. One interviewee noted Google systems may provide such a platform though information privacy and integrity needs must be met. One agency was interested in systems to support joint agency funding applications. One agency noted discussions with health agencies to share information access but questioned information privacy issues. One interviewee noted that the Privacy Act forbade them sharing much of their client information.

Access to Computers and Current Software Usage

Almost all agency staff were able to access a desktop or laptop computer though, in some agencies, computers were shared among workers or staff were unable to access computers, Table 6. Client access was a challenge recognised by most agencies where a minority of clients have access to a computer and/or internet connection. Approximately half of staff had access to an agency-provided cell phone. Most clients late 2010 did not have access to agency-provided Smart Phone or tablet technologies.

TABLE 6. Access to computers and electronic devices

	All or most have access to computer	A few have access to computer	All or most have access to agency Smartphone or 3G enabled laptop	A few have access to agency Smart Phone or 3G enabled laptop
Agency workers	31 (82%)	4 (11%)	2 (5%)	17 (45%)
Clients	8 (21%)	15 (39%)	19 (50%)	5(13%)

Computers are used for a wide variety of tasks including email, word processing, generating reports, staff calendars/appointment diaries, agency and/or staff websites, billing, referrals, recording case notes, information sharing within the agency, programme outcome measurement and ordering stock. In addition to current uses, agencies indicated an interest in the possibility of using computers for inter-agency information sharing, reminders and alerts for staff and clients e.g. automatic text reminders for appointments, volunteer management and development and for providing an overview of interactions by staff with clients, Table 7.

We asked about confidence of the interviewee and colleagues in using their existing systems. All but one expressed high to very high confidence. All but one expressed that they used their agency computer systems 6-8 hours per day. One noted that they used it >8 hours every day. It is important to remember that there may be a discrepancy between the expressed confidence of the interviewees, predominantly managers, and workers in the field. More than one manager mentioned this and that they observed that gaps in confidence existed largely between older and younger workers, younger workers generally having a higher level of confidence and competence with technology. There was openness to increased computer usage. Two agencies were actively investigating use of iPads and possibly iPhones for access to systems.

TABLE 7. Currently use computers for, and interest in future usage

	Currently use for	Would keep using / would be interested in using for
Word Processing - creating letters, flyers, program schedules, etc	34	22
Recording case notes	23	24
Referrals	22	24
Information sharing within the agency	27	24
Inter-agency information sharing of any kind	20	26
Generating reports	29	24
Email	34	23
Billing	21	19
Staff calendars/appointment diaries	28	22
Client support services - for example: interactive educational material, access to information sheets	11	19
Client support services - for example: virtual counselling	2	13
Rostering	21	21
Agency and/or staff websites	27	22
Reminders and alerts for staff and clients For example: automatic texted appointment or medication reminders	9	24
Remote access (being able to access files and information while out of the office via mobile devices or computers)	17	16
Scanner technologies (for example, being able to scan eyes or fingerprints to verify identity of user)	5	7
Tools to calculate welfare entitlements	3	8
Online forms available to be completed by clients prior to appointments	6	15
Portable translation software when interacting with a client with who there is a language barrier	0	14
Accountability software (for example: caseworker notification when a client with a gambling addiction, who has opted into such a system, accesses gambling websites)	1	11
Video-conferencing with clients, particularly those distant from services	0	12
Video-conferencing with staff in own or other agencies	6	18
eTherapy - for example, online education modules or virtual counselling sessions	4	10
Online budgeting services	3	13
Agency provided education programmes online	1	16
Health monitoring systems that alert a professional when concerning data is entered	2	11
Non-staff caregiver support	2	10
Auditable case notes that record who enters and alters notes, who accesses notes and when	4	15
Other (please specify)	4	2

Two noted many workers had smart phones, mostly iPhones. All commented that it was important to agencies that any increased use of technology in their work must make the job they do easier and not detract from time available to interact with clients in person. Reassurance on these points would be valuable in encouraging agencies willingness to consider and try new technologies. One manager noted that they personally found increasing use of software annoying, noting that it distracted from face to face time with clients during meetings.

In our interviews we asked about current and possible future client access to information and software features for clients. None of the interviewed agencies currently provided on-line access for clients to a client's information records. Two agencies allowed clients to access paper copies of information. Some services were provided online by some agencies. For example, care planning applications, some web site information. One agency had online coaching tools available to caregivers. Another agency was interested in providing on-line care plans for their clients. A third was planning an interactive information kiosk in their reception area.

Barriers in the Development of Technologies for Human Services Agencies

Participants identified the primary barriers in developing systems for Human Services agencies as being concerns about overhead costs of the systems (26 out of 38), worker and client lack of confidence in using computer technology (24 and 23), and privacy of information concerns (23). Also of concern were literacy barriers in some client groups (20), the time that might be required to train staff and/or clients in the use of new systems (21) and lack of client access to computers and the internet (18). Lower frequency concerns were the safety of vulnerable clients when using remote client services (13), liability issues connected to the use of such systems (12) and a lack of worker access to computers and the internet (7 - interestingly, as most agencies reported that their workers already have internet access). An agency that works with clients with profound intellectual difficulties identified this client group as one that would have particular difficulty engaging with technologies.

DISCUSSION

Surveyed agencies were generally positive about increasing use of technology in their work Results revealed the following considerations as primary in developing Human Services technologies: worker and client access, cost of implementation, user confidence, privacy and security. Provision of appropriate client access to information, services and care in regards to highly sensitive information must be addressed.

The foremost consideration for agencies when using new tools were privacy and security concerns. Ease of use, ongoing technical support and clarity regarding expected benefits were also important in evaluating tool usefulness. Tools must simplify work, not reduce time for client interaction and accommodate varying degrees of technological confidence among workers.

The advantages to agencies of effective technological advances include promoting smoother handovers of cases (Raptis et al, 2009), improved accountability practices, enhanced transparency and enhanced inter-agency continuity of care (Brankline et al, 2009). Isolated clients could access services more readily. Remote access and upload of case notes could reduce office time required to transfer notes to a paper file or computer system.

Practical and ethical issues when developing a new tool include confidentiality, security of information and compliance with privacy legislation, specifically the Health Records Act 2001, the Information Privacy Act 2000 and the Privacy Act 1988 (Commonwealth). Client access to data needs careful consideration to protect agency workers and their clients. Potential difficulties may arise if clients misinterpret accessed information and act on it with adverse effects.

Continuity of care via linked systems, for what can be a mobile population, was seen as important. This is similar to the issue of Electronic Health Records in the eHealth domain. Records of client consents are important. Some smaller agencies saw potential reduction in

indemnity insurance premiums if a system increased accountability thus reducing the risk of complaints relating to information handling.

There was mixed response to having clients access care plans, services and information, though most were positive. The main concern was about client access to computers. Two agencies did not think clients would be interested in such access and one indicated language or literacy difficulties might limit access. Security of information was again raised. Main concerns were potential misinterpretation of information leading clients to disengage or harming the worker-client relationship. It was believed clients might benefit from following their progress, receiving reminders for actions and meetings, etc.

Client ability to access and correct their information was seen as positive providing that the manner of information handling is clearly communicated to clients who then give informed consent. Obtaining access to remote service provision may be a challenge for some disadvantaged groups who could potentially derive significant benefits from Human Services systems. Even if provided with computers to access services, literacy difficulties might prevent effective utilisation of services.

Our method of data collection may have resulted sample bias towards workers who are more comfortable with such technology. Our survey should be replicated with a larger set of agencies within Australia and elsewhere. Further detailed interviews would be useful, particularly with large government agency managers and workers.

SUMMARY

We surveyed a diverse range of Australian Human Services agencies and interviewed several agency managers to get their feedback on existing systems. Key issues for current and future Human Services agency adoption of IT solutions include remote client and worker access, privacy and security of information, and increasing use of client self-service software, video conferencing and accountability software. Tensions include ensuring continuity of care while carefully managing data sharing with client informed consent, client literacy and client IT access. Human Services is about empowering people to take control of their circumstances and lives, improving the quality of people's lives and helping clients to exercise power in their lives rather than having it exercised over them (Parrot & Madoc-Jones, 2008). IT developments in the Human Services must work to empower clients and aid workers.

REFERENCES

Athena Software. (2010). *Penelope Client Information Management Software* Retrieved from www.athena.software.net/extWebSite_2008/templates/index.html

Brankline, A.L., Coyle, C.M., Jencks, K.A., Mullegama, A., & O'Brien M.W. (2009). Practical Innovations: Technology-Assisted Referrals. *Social Work in Health Care*, *48*, 768-776.

Curam Software Ltd. (2010). Retrieved from www.curamsoftware.com/

DHS. (2010). *CRISSP*. Retrieved from www.dhs.vic.gov.au/crissp

Grundy, J.R., & Grundy, J.C. (2011). *Australian Social Services Agency Software: Requirements, Current Usage and Opportunities*, Faculty of ICT: Swinburne University of Technology.

Icon Global Pty Ltd. (2006). Retrieved from www.iconglobal.com.au/carelink/

Jacmon, J., Malouff J.M., & Taylor, N. (2009). Treatment of Major Depression: Effectiveness of Cognitive-Behavioural Therapy with an Internet Course as a Central Component. *Electronic Journal of Applied Psychology, 5*, 1-8.

Khambati, A., Warren, J., Grundy, J.C., & Hosking, J.G. (2009). Care Planning Systems for Consumer Engagement in Chronic Disease Management. *Electronic Journal of Health Informatics*, *4*.

Klein, B., Mitchell, J., Abbott, J., Shandley, K., Austin, D., & Gilson, K. (2010). A therapist-assisted cognitive behaviour therapy internet intervention for posttraumatic stress disorder. *Journal of Anxiety Disorders*, *24*, 635-644.

Parrot, L., & Madoc-Jones, I. (2008). Reclaiming Information and Communication Technologies for Empowering Social Work Practice. *Journal of Social Work*, *8*, 181-197.
Raptis D., et al (2009). Electronic Software Significantly Improves Quality of Handover in a London Teaching Hospital. *Health Informatics Journal*, *15*, 191-198
Vada Computing Pty Ltd. (2006). *Vada Computing Software Design, Development and Support.* Retrieved from www.vadacomputing.com.au
Visionlink. (2010). *Visionlink: Providing Software Solutions for Human Services, Disaster Management, and Homeless Management.* Retrieved from www.visionlink.org

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