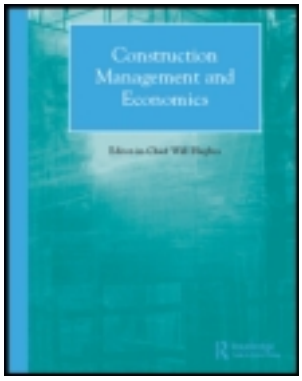

Construction Management and Economics
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/rcme20

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Published online: 03 Mar 2014.

To cite this article: Paul Bowen, Yvette Allen, Peter Edwards, Keith Cattell & Leickness Simbayi (2014) Guidelines for effective workplace HIV/AIDS intervention management by construction firms, Construction Management and Economics, 32:4, 362-381, DOI: 10.1080/01446193.2014.883080

To link to this article: http://dx.doi.org/10.1080/01446193.2014.883080

Construction Management and Economics, 2014
Vol. 32, No. 4, 362–381, http://dx.doi.org/10.1080/01446193.2014.883080

Guidelines for effective workplace HIV/AIDS intervention management by construction firms

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Received 23 May 2013; accepted 9 January 2014

Construction firms have an important role in combating HIV/AIDS in the South African construction industry. The HIV/AIDS intervention management practices of 12 construction firms in Cape Town are examined through interviews and documents. From thematic analysis, five themes emerged: construction firms' perceptions of HIV/AIDS as a threat to the firm; construction firm interventions; barriers to the success of interventions; the role of service providers; and state-led interventions. A tension exists in managing HIV/AIDS interventions as firms are concerned with productivity and profit maximization, but are becoming more engaged with corporate social responsibility and a higher duty of care towards employees. Interventions should extend beyond awareness and prevention campaigns to include testing and treatment programmes. A guideline checklist for such interventions is proposed. Partnering with specialized service providers is recommended, as well as engaging closely with public sector services. Firms successfully managing their HIV/AIDS response should share their experience with others struggling to respond. Employee issues of stigma and reluctance to disclose need to be addressed. Attention should be paid to the employment structure of the construction industry and to the needs of the informal sector.

Keywords: HIV/AIDS, interventions, South Africa, thematic analysis.

Introduction

The human immunodeficiency virus (HIV) is a slowly replicating retrovirus that causes acquired immunodeficiency syndrome (AIDS), a condition in humans in which progressive failure of the immune system allows life-threatening opportunistic infections and diseases to flourish. In sub-Saharan Africa, public sector resources alone are insufficient in combating the HIV/AIDS pandemic, and the private sector is called upon to play a greater role (Gilbert, 2006; Wouters *et al.*, 2009).

While the construction industry has been identified as one of the economic sectors in South Africa most adversely affected by HIV/AIDS, it has also been found by the Department of Public Works, the Bureau for Economic Research and the South African Business Coalition on HIV/AIDS to be one of the least responsive (Department of Public Works, 2004; Bureau for Economic Research/South African Business Coalition on HIV/AIDS, 2004). Factors associated with this include the fragmented nature of the industry; the predominance of small firms; and the diversity of construction work in terms of its nature and location (Meintjes *et al.*, 2007).

The research reported here forms part of a larger study examining the efficiency and cost effectiveness of HIV/AIDS intervention management within construction companies. Bowen *et al.* (2010) established quantitative baselines to these questions, but follow-up investigation, at the detailed level of individual firms, was needed to obtain qualitative information

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about management attitudes, responses and issues. Through face-to-face interviews, qualitative data were obtained from 12 Western Cape construction firms, one HIV+ construction worker and a specialized service provider. Thematic analysis was used to analyse the interview data. Discussion of the emergent themes of the data analysis leads to considerations for more effective HIV/AIDS intervention management and its implications for the construction industry. Guidelines for intervention are proposed, and recommendations for practice and proposals for further research are offered.

Background to the study

According to George (2006), HIV/AIDS significantly impacts on the South African construction sector. Death rates in 2005 were 1.7 per 100 workers, but are forecast to rise to 2.1 per 100 workers by 2015. Thus, the adoption of treatment programmes capable of prolonging the useful lives of victims is a matter of economic, as well as humanitarian, urgency.

Construction work in South Africa is largely associated with migratory labour. This includes rural to urban migration and immigration from other countries in Africa. Workers also travel from urban areas to remote sites to work on projects. Employment that requires absence from home for long periods significantly increases the risk of contracting HIV/AIDS (Whiteside and Sunter, 2000; Haupt *et al.*, 2005a) as it places workers in conditions that inevitably promote poor lifestyle choices (Deacon and Smallwood, 2003). According to the Interagency Coalition on AIDS and Development, working on remote sites also often distances them from reasonable proximity to healthcare facilities (Interagency Coalition on AIDS and Development, 2004). Other aspects of risk and vulnerability include sub-standard living environments (poor housing), a legacy of inadequate education, high rates of alcohol and substance use (Interagency Coalition on AIDS and Development, 2004) and risky sexual behaviour (Fourie and Schonteich, 2002).

Barnett and Whiteside (2002) note that the deeper an industry is located within the unregulated 'informal' industry, the greater its vulnerability to the impact of HIV/AIDS, as those operating on the fringe of the mainstream economy are particularly vulnerable to the disease (Haupt *et al.*, 2005b).

Quantitative studies have sought to establish the nature and extent of the HIV/AIDS threat in the formal construction industry in South Africa. These have examined the awareness of HIV/AIDS among construction workers (Haupt and Smallwood, 2003a, 2003b); the relationship between age and worker perceptions, knowledge, beliefs, attitudes and behaviour towards infection (Haupt *et al.*, 2005a); and the degree of association between certain risk factors (e.g. type of employment) and the prevalence of HIV/AIDS (Bowen *et al.*, 2008). A preliminary analysis has been undertaken of HIV/AIDS interventions implemented by construction firms in the Western Cape (Bowen *et al.*, 2010).

Overall, these studies have shown that greater awareness on the part of employees has not been matched by increases in effective precautionary and preventative behaviour in adolescence and adulthood. Many cultural imperatives, including beliefs in invincibility and irrational curative myths, still prevail (Kalichman and Simbayi, 2004), especially among migrant workers. More effective intervention strategies are therefore needed, but employers themselves must first accept the threat that HIV/AIDS poses to the long-term future of the construction industry and recognize the benefits that providing appropriate services to employees might deliver.

HIV/AIDS services to employees

The problems associated with public sector HIV/AIDS testing and treatment in South Africa are well documented. Gilbert (2006) and Wouters *et al.* (2009) point to the labour-intensive nature of public sector anti-retroviral therapy (ART) programmes, overburdened healthcare staff and an overstretched public health system. Gray (2005) notes problems associated with the procurement, distribution and use of anti-retroviral (ARV) medication. Kelly and van Donk (2009) point to the role to be played by communities and civil society, while the Overseas Development Institute (2007) argues for greater involvement of the business sector in South Africa in the fight against HIV/AIDS. McDonald (2004) and George and Quinlan (2009) identify private sector inducements such as the falling cost of treatment, activist pressure and corporate social responsibility.

McGreevey *et al.* (2003) suggest eight interventions for HIV/AIDS prevention, care and treatment for construction workers: condom promotion and distribution; treatment of sexually transmitted diseases (STDs); peer counselling on safe behaviour; voluntary counselling and testing (VCT); palliative care; treatment of opportunistic infections; opportunistic illness prophylaxis; and laboratory-related services. They found that the cost of these interventions ranged from 0.14% to 1.00% of total construction project costs.

Creese *et al.* (2002) conclude that a strong economic case exists for prioritization of preventive interventions and that, where potentially exclusive alternatives exist, interventions offering the best value for money should be favoured.

Research by the Bureau for Economic Research (2004, 2005) indicates the extent to which South African companies are investing in workplace programmes. The 2004 study found that, in contrast to the financial services, mining, manufacturing and transport sectors of the economy, less than a third of building and construction firms had implemented an HIV/AIDS policy. Construction performed comparatively poorly with regard to the implementation of awareness, and care support and treatment programmes; this despite the existence of the *Specification for HIV/AIDS Awareness* offered by the Construction Industry Development Board (2003), the *HIV/AIDS Awareness Programme* prepared by the Department of Public Works (2004) and the *Code of Practice on HIV/AIDS and the World of Work: Guidelines for the Construction Sector* published by the International Labour Office (2008).

The Bureau for Economic Research (2005) found that 31% of construction companies had implemented an HIV/AIDS workplace awareness programme; 15% provided VCT; 10% had instituted an HIV/AIDS care, support and treatment programme; and only 3% provided ART. The Western Cape lagged behind all other provinces in the provision of HIV/AIDS services to employees, possibly because of the perceived (lower) impact of the disease in this region (Bureau for Economic Research, 2005).

Connelly and Rosen (2005) examined the constraints faced by small and medium enterprises (SMEs) in the implementation of HIV/AIDS programmes. AIDS was reported to account for some 10% of the annual employee 'turnover' of about 13% for SMEs (across all industries). About 25% of all the companies sampled provided some HIV/AIDS services to employees. Approximately 30% of permanent employees had access to employer-sponsored healthcare.

In a survey of HIV/AIDS programmes offered by 52 large (each exceeding 6000 employees) private sector and parastatal South African companies, Connelly and Rosen (2006) found that nearly 50% of the companies offered VCT and that 75% made ART available to their employees. However, the same study reported that uptake rates for both interventions were comparatively poor across the companies surveyed. Bhagwanjee *et al.* (2008) identified impediments to treatment uptake in the mining industry as: fear of being exposed in the workplace as HIV+; limited time to attend treatment programmes; poor quality post-test counselling and follow-up; emotional difficulties in coping with the diagnosis; and traditional customs of illness and medicine.

The effectiveness of workplace HIV/AIDS 'health management' programmes was investigated by George and Quinlan (2009). They found that VCT and ART are components of a still-evolving framework for health management of employees. Programmes commonly begin with 'education and awareness' campaigns, thereafter incorporating VCT services and possibly adding in ART and including provision for food supplements and ART for spouses (George and Quinlan, 2009). Reasons for this cascading approach include the increasing financial impact on companies, the slowly declining costs of treatment, activist pressure, the government anti-retroviral treatment programme and corporate social responsibility (McDonald, 2004). The underlying economic imperative for the provision of ART is that it enables infected workers to remain productive, thus containing replacement recruitment, training and absenteeism costs.

Bowen *et al.* (2010) undertook quantitative analysis of HIV/AIDS policies and treatment programmes by 30 Western Cape construction firms. The survey findings indicate the lack of a universal view about the long-term threat of HIV/AIDS to the industry. Most participant organizations had *awareness* policies in place but prevention and treatment policies were far less common. Treatment programmes were the least implemented of all intervention services, reportedly due to insufficient resource capacity, the potential stigmatization of infected persons and low take-up rates. Doubt existed as to the financial viability of treatment programmes.

Despite the economic benefit of VCT and ART (see Rosen *et al.*, 2003), many large companies report low employee uptake rates for VCT and ART, despite substantive financial investments and sophisticated programme designs (George and Quinlan, 2009). Noticeably poor in this regard is the construction sector (see Connelly and Rosen, 2006). Barriers to VCT uptake are reported as: limitations in the design of VCT services (e.g. perceived hostility of facility staff and confidentiality violations); emotional and cognitive barriers (e.g. denial of risk and perceptions of little benefit from VCT); and social barriers (e.g. stigma, social marginalization and the influence of partners). Barriers to accessing ART, and to sustaining employee adherence to treatment regimes, include stigma and social factors (Bureau for Economic Research, 2005; George and Quinlan, 2009; Deacon *et al.*, 2009).

To date, PEPFAR (the US President's Emergency Plan for AIDS Relief) subsidization funding has enabled the HIV/AIDS awareness, prevention, training, counselling and testing services of external service providers to be provided free to construction firms. It has heavily influenced firms' original decisions to engage with intervention management. The importance of

PEPFAR funding and its possible discontinuation are discussed more fully below.

It is not clear from existing studies what is actually taking place in practice, nor how firms perceive their role in this regard. More detailed investigation at the level of the individual firm is needed. This study addresses that shortfall.

The research question posed in the study was: 'What form do workplace HIV/AIDS interventions take in the Western Cape construction industry?' The research aim was to develop a better understanding of HIV/AIDS interventions in firms operating in a region already identified for its poor response. It aimed to explore the rich 'stories' embedded within firms concerning the impact of, and responses to, HIV/AIDS. Examining the 'voices' and 'stories' emanating from firms regarding their experiences of HIV/AIDS in the workforce helps extend our understanding of the actors in, and modes of, workplace HIV/AIDS intervention management in the construction industry, providing guidance as to how best to support and extend this endeavour.

Research methodology

The research methodology adopted is qualitative in nature, focusing on the social and social process aspects of workplace HIV/AIDS interventions and how they are perceived by construction firms, adopting the epistemology of *social constructivism* (Charmaz, 2001, 2009). A qualitative methodology is considered appropriate because we need a complex, detailed understanding of the issues surrounding HIV/AIDS workplace interventions; because we want to hear the 'stories' emanating from participants; and because we want to understand the settings in which the participants address the issue of HIV/AIDS in the workplace (Creswell, 2007).

The strategy adopted is that of a collective (multiple) case study (Creswell, 2007). Individual construction firms comprise the cases, while the units of analysis are the processes and procedures adopted by firms for HIV/AIDS intervention management (see Yin, 2009). Purposive and convenience sampling of construction firms was adopted (Yin, 2009): purposive in the sense of selecting cases to potentially show different perspectives of the issues at hand, and convenient in the sense that a number of firms expressed unwillingness to participate.

Semi-structured interviews comprise the bulk of data collection within the case studies, and the thematic data analysis technique is used to examine the qualitative interview data (and any documentary evidence) to identify emergent themes (see Stake, 1995; Ritchie *et al.*, 2003). The logic of replication was employed, in terms of which the procedures were replicated for each case (Yin, 2009).

As noted above, the work presented here represents the second phase of continuing research that investigates HIV/AIDS in the context of the construction industry in South Africa. The first phase used a quantitative questionnaire survey to establish baseline information. This phase explores issues arising from the survey research in greater depth, adopting case studies as a means of data collection, with the aim of better informing management intervention practice. Further research, based upon the findings of this phase, is envisaged. Overall, therefore, the research reflects a sequential mixed methods approach (see Bak, 2011) whereby the outcomes of each phase influence the nature, extent and methods for the following phase.

Data collection

Interviews were conducted with representatives from a purposive sample of 12 Western Cape construction firms, comprising 10 respondents to an earlier online survey who had expressed willingness to participate in follow-up research, and augmented by two small firms identified from colleagues' personal contacts. Convenience played a part in sample selection, given time and travel resource limitations as well as reluctance by some firms to participate.

The sample was deliberately chosen to cover a cross-section of formal construction industry characteristics, in terms of employment size and turnover value.

Interviews were held with senior staff: either human resources (HR) managers or directors involved with, and/or knowledgeable about, their organization's activities in the fight against the HIV/AIDS. The importance of interviewee status should not be overlooked, since most of the people interviewed are the 'champions' of HIV/AIDS intervention management within their respective organizations and hold sufficient authority to drive the process forward. The preponderance of female interviewees may also be important (see Table 1).

An additional interview was held with an HIV+ employee [CW1] of one of the firms [CF9], who felt that he had a 'story' to tell. This interview was not sought by the researchers, but offered at the time by the HR manager of the employee's firm. Employee interviews were not planned at this stage of the research, since the identified issues relate more to the nature and extent of the firms' management responses. Nor was the research sufficiently resourced at this stage to cope with multiple language problems. Direct contact with workers is envisaged as future research

Table 1 Case study characteristics

Company reference	Size (permanent employees)	Size (annual turnover) ZAR	Interviewee status	Interviewee gender (F = female; M = male)	Interview duration (hours: minutes)
CF1	57	> 13 < 26 million	Managing member	M	1:13
CF2	15–30	< 6 million	Responsible for wages, orders, creditors	F	0:54
CF3	600	> 26 million	Risk manager	M	1:09
CF4	250	> 13 < 26 million	HR officer & AIDS coordinator	M	0:42
CF5	300	> 26 million	Group health and safety manager	M	1:18
CF6	250+	> 26 million	Director (oversees human resources and medical department)	F	0:50
CF7	40	> 13 < 26 million	Project manager	M	0:50
CF8	165–70	> 26 million	HR manager	F	0:37
CF9	250+	> 26 million	Senior manager	F (+ CW1 = M)	1:26 (0:17)
CF10	1600	> 26 million	Organizational development director	F	0:56
CF11	307	> 26 million	HR manager	F	0:47
CF12	45	< 6 million	Closed corporation member	F	1:04
SP1	NA	NA	Director	M	1:27

develops and as the need for information about employee attitudes becomes more clearly defined.

A director of a company providing specialized HIV/AIDS care services to industry [SP1] was interviewed. The primary objectives of this company are to protect those who are HIV negative (to prevent transmission) and to keep HIV+ people productive. Its services include HIV/AIDS workplace education, awareness and prevention campaigns, voluntary counselling and testing, and ongoing treatment programmes.

All interviews were conducted throughout February 2011 at the offices of participants. While the interviews were carried out in the Western Cape, several of the larger construction companies interviewed operate in various provinces of South Africa, and elsewhere in Africa. Thus some knowledge of national practice was gained.

Using an *aide-mémoire* based on issues previously identified in quantitative survey (Bowen *et al.*, 2010), a semi-structured interview was held with each of the case study participants. In the event, the interviews were more open than structured. The *aide-mémoire* simply stimulated discussion and facilitated the emergence of individual participants' stories (Charmaz, 2006). Interviewees were asked to describe any intervention processes undertaken by their firms. Subsequent questions by the interviewers generally sought clarification about particular processes or instances.

Interviews lasted about one hour each and were conducted in English, with the exception of the interview with the HIV+ employee where an interpreter was present. Here questions were posed by the interviewers in English. Where CW1 did not fully understand the question (obvious by his body language in turning to look towards the interpreter), the interpreter translated it into *isiXhosa* (an African language). A mixture of English and *isiXhosa* answers ensued. The English (and English translations) of the worker's responses were then transcribed from the digital recordings.

Verbatim and edited interview transcripts were prepared, the former being preferred and used for primary data analysis (Poland, 2001). In addition to the digital recording, interviewers also made handwritten notes during interviews.

Copies of the edited transcripts were sent to participants for confirmation ('member checking') (Lincoln and Guba, 1985; Poland, 2001). No requests for revisions were received apart from minor clarification of staff roles by the SP1 interviewee. For the worker's interview, the interpreter confirmed transcription accuracy.

Documentary evidence (including organizational structure diagrams, policy documents, posters and examples of HIV/AIDS intervention management reports) was also gathered from some firms (see

Reinharz, 1992; Charmaz, 2006) and subjected to coding and analysis.

Ethical considerations in the form of informed consent to the interview and the recording thereof; the absence of deception; privacy and confidentiality safeguards; and accuracy were observed (see Christians, 2005). Institutional ethical clearance was also obtained.

Case sample characteristics

Using gross annual turnover as a measure of firm size, seven firms reported a turnover in excess of R26 million per annum and are categorized as 'large' (see Statistics South Africa, 2008, p. 18). The remaining participating organizations may be classified as follows: two 'micro' firms (<R6m per annum); and three 'medium' firms (R13m–R26m per annum). In terms of the number of permanent employees, three of the 12 construction firms are classified as small (fewer than 50 permanent employees); three are classified as medium (between 50 and 250 employees); and six are classified as large (over 250 employees).

Given that different firms use different employment strategies, it was difficult to make consistent comparisons between employment categories, therefore the findings of the study largely relate to the *permanent* workforce of the interviewed firms. This limitation is discussed later. Table 1 depicts the characteristics of the construction firms and the interviewees.

Analysis of the interview data

Inductive thematic analysis of the data was performed, using a 'bottom-up' approach whereby the identified themes are strongly linked to the raw data (Patton, 2002). Miles and Huberman (1994) and Braun and Clarke (2006) provide procedural guidelines for conducting thematic analysis: familiarizing oneself with the data; generating initial 'open' codes (through analysing words and sentence fragments); searching for themes; reviewing the themes; and defining and naming the themes. Initial 'open' codes are rationalized into sub-themes and then progressively into 'themes' at the top level of inductive analysis.

The qualitative data were coded and analysed using the NVivo (Version 9) (QSR International, 2011) software package (see Punch, 2005; Bryman and Bell, 2007; Bazeley, 2007). Line-by-line open (initial) coding (see Holton, 2007) of the interview transcripts and documents was performed. This process began with the creation of 'free nodes' extracted from the data. Open coding involves the examination of the interview transcripts with the intention of classifying and then 'tagging' text with codes in order to facilitate later retrieval (Ryan and Bernard, 2000). Cross-transcript comparisons were undertaken to ensure coding consistency. A total of 389 free nodes were developed. Rationalization then occurred by reviewing and merging nodes with similar meaning. This reduced the number of free nodes to 146.

Axial coding may be thought of as the grouping together of segments of interview transcripts that reflect similar themes: in essence, gathering related concepts into a 'set' (Bazeley, 2007). Axial codes identify the central phenomena or emergent themes embedded in the qualitative data (Creswell, 2007), moving to a higher level of abstraction than the codes they cluster (Bazeley, 2007). The 146 free nodes clustered into 48 issues. From these, 25 sub-themes were identified and eventually five main themes emerged. The outcomes of the analytical process (from the point of 48 identified issues) to arrive at the five emergent themes are displayed in Tables 2 and 3.

Emergent themes

Three main themes emerged at the *firm/organization* level (see Table 2): construction firms' perceptions of HIVAIDS as a threat to the firm; interventions; and barriers to the success of interventions. At the *industry/state* level (see Table 3), two main themes emerged: the role of service providers; and state-led interventions in combating HIV/AIDS.

Firm/Organization themes

For Theme 1, firms' perceptions of HIV/AIDS as a threat, interviewees understood how (untreated) HIV/AIDS could negatively affect the skills capacity and productivity of the firms through absenteeism, skills depletion and a consequent need to recruit and train new workers. Increased risk of accidents was also thought likely.

Under Theme 2, construction firms are addressing the pandemic in different ways and to differing extents. Most of the firms, except smaller ones (e.g. CF1, CF7, CF12), provide HIV/AIDS awareness and prevention interventions. A small firm points to competing management demands:

> CF7: … we've fallen a bit short with those kind of policy issues relating to HIV/AIDS, but health and safety has been a big issue for us as we've grown … something like HIV, well, to put it bluntly, it's not on the radar screen really.

Table 2 Firm/Organization-level HIV/AIDS themes emerging from the data analysis

Main themes	Sub-themes	Rationalized free nodes
1. Construction firms' perceptions of HIV/AIDS as a threat to the firm	1.1 Absenteeism as a lack of human resources to the firm	Cover-ups by fellow workers
	1.2 Cost to the firm	
	1.3 Retraining workers to replace skills	
2. Construction firm interventions	2.1 Presence of an HIV/AIDS policy	Corporate social responsibility
		Families of workers
		Non-discrimination
		Assessment of policy (other benefits)
		No HIV/AIDS policy
	2.2 Awareness campaigns	Toolbox talks, informal talks and other discussions
		Annual AIDS Day
		Workplace posters
		Pamphlets
		Teaching sessions
		Peer education
		Voluntary testing and counselling
		Courses
		Medical clearance
		No awareness campaign
	2.3 Prevention	Precautions
		Condoms
	2.4 Treatment	Confidentiality
		Time off
		Transport
		Company doctor
		Anti-retroviral medication
		Patient counselling
		No treatment programme
	2.5 External service provider	
	2.6 Funding	HIV/AIDS budget
		Medical aid schemes
3. Barriers to the success of construction firm interventions	3.1 Assumptions by the firm	Denial of HIV/AIDS presence in the firm
	3.2 Do not know where to begin/lack of knowledge of the HIV/AIDS pandemic	
	3.3 Small size	Trust relationship
	3.4 Time constraints	
	3.5 Other priorities	General safety
		Other health problems or injuries
		Employee housing urgency
		Not urgent
	3.6 Financial viability of a formal HIV/AIDS programme	
	3.7 Mobility of workers	
	3.8 Stigma	
	3.9 Disclosure	Fear
		Need to know HIV status
	3.10 Barriers to compliance	Alcohol, drugs and smoking
		Unsafe sex
		Education
		Cultural factors
		Sensitive issues

Table 3 Industry/State-level HIV/AIDS themes emerging from the data analysis

Main themes	Sub-themes	Rationalized free nodes
4. Industry: the role of service providers	4.1 Awareness-to-Action counselling and testing process	Counsellor training
		Training for managers
		Data capture
		Situation reports
		Patient monitoring
	4.2 Community Health Solutions (CHS)*	
	4.3 Client role	
	4.4 US President's Emergency Plan For Aids Relief (PEPFAR) funding	
5. State: state-led interventions	5.1 State programmes	State clinics
		Quality of existing public healthcare system
	5.2 Occupational Health and Safety Act	Legislation affecting construction industry

Notes: *Community Health Solutions (CHS) are formulated by SP1. The objective of the CHS model is to provide a sustainable solution to the HIV and TB epidemic within South African communities. CHS involves a franchised model to ensure maximum market penetration throughout the country. Aspiring entrepreneurs and leaders within communities will be carefully screened and assisted to acquire a franchise (supplementary document from SP1).

The frequency of campaigns varies, with one firm combining a bi-annual one with an 'as needed' approach:

> CF10: We do it at least once every second year, but sometimes more often. When we have a new site or a new area, we will test that whole site staff or that whole area.

Interventions usually (but not always) derive from the development and adoption of a formal HIV/AIDS policy (documents provided by CF4, CF5, CF6, CF8, CF9 and CF10). Less often, policy documents go beyond HIV/AIDS issues to cover the general well-being of staff:

> CF11: … an employee wellness policy, which covers basically dread disease, TB, HIV/AIDS, performance incapacity, education, confidentiality, so it's a broad spectrum …

Some firms adopt a 'top-down/bottom-up' approach and involve employees in policy development:

> CF3: We said, look, we need to put a HIV policy in place. This is what we have to look at, but we want to involve everybody. We've got a workers' committee that was in on it and so on.

The implementation of awareness and prevention campaigns is most actively pursued by seven firms (CF3, CF4, CF5, CF6, CF9, CF10 and CF11). Regular partial intervention activities (peer education, counselling and voluntary testing) are mainly delivered through an external service provider (SP1) for the same firms, although now under threat of reduced frequency due to loss of funding as discussed below. Comprehensive *treatment* programmes are formally offered by only three firms (CF6, CF9 and CF10).

Awareness campaigns comprise activities such as the occasional use of weekly discussions on site ('Jika' or 'toolbox' meetings) to discuss HIV/AIDS topics (CF1, CF3, CF4, CF5 and CF11); placing warning posters prominently in worker amenities on site (CF3, CF4, CF5, CF6, CF8, CF9, CF10 and CF11); provision of advisory pamphlets (CF 2 and CF11); and through HIV/AIDS voluntary testing (actively pursued by CF3, CF4, CF5, CF6, CF9, CF10 and CF11). Posters and pamphlets are provided by state clinics or authorities, by SP1 and partially in-house (CF6). Firms were aware of the need for regular refreshment of these media. The annual, nation-wide AIDS Day in December is recognized by most firms, with some mounting special events and material (including prominent banners) on all sites, while others concentrate on only one site. Verbatim interview extracts relating to awareness campaigns include:

> CF10: [posters]… four languages – Afrikaans, English, Xhosa and Sotho.

> CF6: … we have like really cool posters that go out, with different messages – little cartoons, little funny ones. We prepare them in-house. A lot we got from [SP1] also.

> CF11: … look we need twenty posters, because we don't just want to put one poster per site. We're looking at putting up maybe four or five posters per site.

Prevention strategies may start with explicit precautionary instructions set out in HIV/AIDS policies (documented by CF4 and CF9) to prevent HIV/AIDS transmission through the contact and exchange of bodily fluids in the case of accidents occurring on sites, as one interviewee recounted:

> CF6: … a vehicle accident where someone is HIV positive, and so we've had to give them the post exposure prophylaxis.

More often, prevention is limited to the provision of free condoms in offices and on sites (CF3, CF5, CF6, CF8, CF9, CF10 and CF11):

> CF5: But you'll find, on all our sites, the condom dispensers are up. Even here, in head office. The guys soon let us know if they run out of the condoms.

Prevention efforts are more systematic and regular when partnered with an external service provider. SP1 provides anonymous statistical reports to firms for each intervention activity to assist their strategic decision making. Where SP1 is further involved, it will provide treatment services or monitor HIV+ employees who have entered an alternative treatment programme (state or in-house).

Awareness and prevention partnering with a service provider is increasingly at risk as a result of the possible discontinuation of PEPFAR (the US President's Emergency Plan for AIDS Relief) subsidization. To date, PEPFAR funding has enabled the HIV/AIDS awareness, prevention, training, counselling and testing services of SP1 to be provided free. It has heavily influenced firms' original decisions to engage with intervention management, and those firms will now need to rethink strategies and budgets. Currently, the services of SP1 are free annually up to and including the testing level. Follow-up treatment is then provided on a case-by-case fee-for-service basis. Faced with the need to also pay for pre-treatment intervention services, some firms are planning to implement them bi-annually, rather than annually.

Three large firms successfully pursue in-house treatment programmes (CF6, CF9 and CF10). They appear to have gained the trust of their workforce, with almost 100% testing and treatment participation rates. Smaller firms (CF1, CF2, CF7 and CF12) generally take on HIV/AIDS cases on an ad hoc basis, as they become aware of them, and tend to emphasize a family trust relationship that (in their view) does not require implementation of a formal treatment programme:

> CF7: I think that for the staff that I have, I've almost become like a paternalistic figure to them. So I've got forty labourers in my family!

However, this claimed close relationship could mask realities and lead to false assumptions about employees. Analogies here might be the reluctance of homosexual or lesbian offspring to 'come out' to parents, or the secrecy associated with some substance use.

Treatment interventions provided in-house by construction firms take the form of assisting employees to attend state-provided clinic programmes, by allowing time off and providing transport to and from sites. More direct help includes providing regular vitamin and dietary supplementation, and ARV medication, to employees on site. Two firms employ company nurses to do this as part of their other health and safety duties. For CF6, the director with HR responsibility travels monthly to each remote site to undertake this task. For CF9, the HR manager occasionally accompanies the company's consultant nurse on her 'rounds'. One interviewee (CF1) reported that, in at least one case, his personal doctor had assisted with treatment interventions.

For the third theme, the interview responses demonstrated that HIV/AIDS management interventions are not effective or not actively pursued in some firms for a variety of reasons. There may be an assumption that there is no real need, which could be linked to a lack of perceived severity of the situation and its long-term threat to the construction industry. Others see competing priorities or believe they operate in a less regulated environment:

> CF8: Where we do offer assistance in treatment is with alcoholism and drugs. That is something that we do more than we deal with any of the other issues.

> CF7: Apart from the occasional minor occupational injuries, we haven't had more serious illness. But we do have a massive drinking problem. We see a Friday and a Monday story that's quite big. And we have had one or two TB cases. Other than that, nothing really. We've actually tried to prioritize benefits for the labour force. A large majority of them are staying at Samora-Machel, in shacks with no running water. It's not even their house. We've basically said, well, first and foremost, we need to look at transport. So we run a truck to Samora-Machel and they actually get driven to the sites. In terms of basic needs, HIV is not even registering on that scale. And one of our intentions now is: how do we actually get formal housing for these guys?

Reluctance of HIV+ employees to change lifestyle was reported by several interviewees, especially continued alcohol use that militates against effective ARV treatment (CF3, CF6, CF7, CF8, CF9 and CF12). These 'habit' factors usually incur a direct cost to employees, whose wages may already be adversely affected by a reduction in the hours they are able to work. This in turn has a domino effect on employees' families. The 'city' and 'rural' families maintained by some migrant workers may further extend this impact.

Many construction employees move to different (often remote) sites, on a relatively short-term basis, precluding normal and stable lifestyles, thus leading to sporadic and unsafe sex practices, and thereby negating the effectiveness of awareness and prevention campaigns (CF5, CF6 and CF10).

Employees, particularly contract (casual) workers who fall outside the safety net of private medical aid scheme cover, may have to rely on state-led HIV/AIDS programmes administered in local clinics. Here again, remote site locations make clinic attendance difficult. In smaller firms, workers in urban areas are frequently rotated between local sites, sometimes on a daily basis, to undertake particular tasks, and this has the same effect. Most state clinics are overcrowded, leading to long waiting periods for consultation and treatment. Workers become frustrated by the delays and abandon their treatment regimes.

Five firms (CF1, CF2, CF7, CF8 and CF12) believe they do not yet know enough about HIV/AIDS to make an informed decision about an effective HIV/AIDS policy or programme for their organization. Despite the availability of industry and state guidance noted earlier, ignorance at organization level seems to persist.

Conversely, four firms (CF1, CF6, CF9 and CF10) explain that an HIV/AIDS programme is (or would be) financially viable for them, by safeguarding a reliable workforce. Employee skills acquisition training is a costly undertaking, particularly for heavy equipment operators. These employees are also often the ones sent to remote sites for extended periods, thus exposing them to greater risk of infection, and they are reported to account for a significantly higher proportion of HIV/AIDS prevalence in firms (CF10, SP1). Extending the useful lives of these employees (reportedly by at least 10–15 years) by providing appropriate HIV/AIDS intervention management, compared with the alternative of additional recruitment and training costs, is seen as a 'no-brainer':

> CF6: So, it makes cents, in Rands and cents. It makes sense with a 'c' and it makes sense with an 's'. It's just the right thing to do.

> CF9: It's simply that, at the end of the day, it's a business case. It's about retaining the skills for the company, and keeping those employees as productive for as long as possible.

> SP1: With many of those people, they left school early. They were un-schooled, but subsequently skilled … and over time, they became skilled on those machines. Apparently, a final-cut grader [operator] is a very specialized person and to retrain that guy in terms of time and equipment is seriously expensive – let's say four hundred thousand Rand over a period of time.

Industry/State-level themes

The role of specialist service providers (Theme 4) is well understood by the firms that have engaged in HIV/AIDS management interventions to the treatment programme stage, but less so for those involved only at the awareness and prevention campaign stage, and hardly at all for firms minimally or not engaged.

The interviewee for SP1 described a service process under an 'Awareness-to-Action' banner. Service provider-based (pre-treatment programme) interventions include: client information sessions, employee awareness education, awareness poster and pamphlet provision (in several languages), peer counsellor training, and voluntary counselling and testing.

Statistics for employee attendance and participation in these activities are reported to the client on an anonymous basis, including testing results, so that a firm engaging the provider's services acquires reliable information about the prevalence of HIV/AIDS across the organization (assuming sufficiently high employee participation). The pre-treatment services are administered either at the client's headquarters or on individual sites for very large or remote projects.

Firms such as CF6, CF9 and CF10 are aware of the possible demise of PEPFAR funding and the budget impact this will have on them. All three indicate that they will continue their HIV/AIDS management intervention activities, but might reduce the frequency of pre-treatment services (e.g. from annually to bi-annually). They also note that engaging with SP1 provides better confidentiality, sensitivity and security of information. It relieves them of the need to start at ground level with in-house interventions and gives them a reliable budget baseline.

With respect to the public healthcare system (Theme 5), it is claimed that the conditions of the state clinics (and even hospitals) are often inadequate or that they are dilatory in tending to the needs of workers, leading to much wasted time. Administration of ART may also be delayed. However, interviewees also think

that employees may feel comfortable dealing with state clinics in one respect: it allays fears of their status being accidentally disclosed to their employers and fellow workers.

Several interviewees mentioned the impact of occupational health and safety (OH&S) legislation (Occupational Health and Safety Act, No. 85 of 1993 as amended) (Republic of South Africa, 1993a). Under the regulations of this Act, heavy equipment operators must undergo annual health checks to examine a range of physical conditions including body mass, eyesight, hearing, blood pressure, heart and lung function, pulse, as well as diabetes and tuberculosis (TB) tests. The regulations are now being extended to all construction workers. The medical examinations are paid for by employers, who must maintain appropriate certification records. Workers who change jobs are required to undergo exit and entry examinations. Interviewees make the point that, while this health examination is compulsory and although TB is a notifiable disease in South Africa, HIV/AIDS testing is not a statutory requirement; nor is it notifiable.

Several interviewees (CF3, CF4, CF6, CF9 and CF10) suggest that, with HIV/AIDS intervention, corporate social responsibility (CSR) could manifestly be expressed within the organization as much as beyond it. One firm notes that its interventions on remote sites have been accompanied by the delivery of awareness campaigns to local schools and communities, thus fulfilling internal and external CSR:

> CF6: … schools approach us to also be part of this whole programme. We have worked with quite a lot of communities … but the only problem is you just never know how big a community is, until you get there! … the community we've done in the Eastern Cape. We've done schools in Transkei. We've done teachers in Transkei … We've done programmes in the Western Cape where we talk to schools, and things like that. We don't do the tests then. We just do education on their level, that type of thing. And we do it on farms …

For firms and for construction workers, there is still a resistance to intervention activities. Fears of job insecurity, and the stigma associated with disclosure, militate against full employee compliance with treatment regimes. Ethnic and cultural factors play a large role in this. Six firms (CF1, CF2, CF4, CF6, CF8 and CF11) have found the sensitivity surrounding the whole topic to be a challenge.

Summary

Construction firms are caught in a bind between maximizing and maintaining productivity on the one hand, and on the other hand fulfilling a duty of care towards employees. Moreover, firms' policies directed towards the needs of the employees are not always aligned with the actual practices of the firms. Where an HIV/AIDS policy exists, it largely deals with awareness and prevention, with little or no coverage of more costly treatment interventions. This confirms the fragmented approach towards HIV/AIDS interventions claimed in earlier studies (e.g. Creese *et al.*, 2002; Bureau for Economic Research, 2004, 2005; George and Quinlan, 2009).

Labour unions are something of an enigma in this research. Their role in combating HIV/AIDS was raised by none of the case study interviewees as an open-ended topic. Clearly, however, in representing employees' interests and articulating their needs and values, unions should be active in applying pressure at all levels, from individual organizations to industry associations and beyond to provincial and state governments. This is a question for future research.

The interviews also revealed how the structure of the construction industry in South Africa gives rise to two further concerns.

A large *informal* sector exists, operating almost exclusively in 'township' and rural areas. Construction activity in this sector is usually limited to basic shelter housing and carried out by unregistered entrepreneurs on a cash basis. It is almost completely unreached by existing legislative and administrative processes. Establishing contact with informal 'builders' is difficult and exacerbated by the problem of communicating in different languages with people whose education is limited and whose skills have been acquired through rudimentary means. The current research was not resourced to explore this sector. Realistically, substantial improvement here will rest upon the demonstration of more effective HIV/AIDS intervention management in the formal sector, which might then be transferred as a model to the informal sector.

The second concern relates directly to the formal sector. Most construction firms employ a relatively small permanent workforce. This is augmented by the use of subcontractors and by the hiring of temporary labour to suit operational requirements. In terms of HIV/AIDS interventions, the dilemma then becomes: to whom should help be extended? While independent subcontractors might be expected to manage their own interventions, the larger problem of contract workers remains.

This situation was highlighted anecdotally by CF5 whose firm had arranged with SP1 to conduct HIV/AIDS awareness, and voluntary counselling and testing services, for the first time, on a site for a new project. When the participation report was examined, it was found that the number of participants greatly exceeded

the CF5 workforce. The interviewee laughingly recounted that the discrepancy was explained when it emerged that, in addition to the CF5 permanent workforce, SP1 had dealt with all the contract and subcontract workers present that day on the site. This experience subsequently led CF5 to amend its policy, extending awareness, prevention, counselling and testing services to everyone present on the site on the day of administration. Follow-up treatment interventions are offered to HIV+ employees in the CF5 permanent workforce and to contract workers for the duration of their engagement plus six months. On a case-by-case basis, some assistance is also given to the families of HIV+ employees. This demonstrates a relatively high level of commitment to employee well-being, generous in comparison to the practices of other firms interviewed. For some, intervention management is usually offered only to permanent staff and limited to awareness and prevention campaigns, voluntary counselling and testing, and sometimes transport and time off to attend state clinics for HIV+ employees. For other firms (e.g. CF10), permanent staff are further distinguished between monthly paid and hourly paid employees. The former enjoy the benefit of private medical insurance (incorporating HIV/AIDS-related private treatment) paid for by the employer, while the latter have access only to the overburdened state HIV/AIDS systems. What seems to be overlooked in these distinctions is the issue of equity, and how intervention discrimination may be perceived by workers.

Such inconsistency in HIV/AIDS intervention management in the formal sector of the construction industry reinforces the need for improvements in industry practice, with leadership at industry and state levels being purposefully driven at organization level.

Following the thematic analysis of the case study data, and conceding the complexities revealed under the emergent themes, a broad framework, comprising guidelines for effective HIV/AIDS intervention management can be proposed. These are first considered at each level.

Considerations for workplace HIV/AIDS interventions

Employee-level considerations

Workplace HIV/AIDS management interventions will only be successful if the employees themselves perceive them as desirable and trustworthy. Then costs will not be wasted, since the loyalty so earned by employers will assist in bridging tensions with productivity. Employees who value a treatment programme are more likely to adhere to it and less likely to become non-compliant, or revert to behaviours that put the effectiveness of their treatment at risk. This relationship, however, is neither certain nor likely to be consistent. The construction worker employed by a firm that provides treatment assistance explained:

> CW1: … but I was told that if I look after myself well, I can stay much longer … Ja, now that I'm on this programme, I feel it's helping a lot … There's a bit of improvement in my health … I haven't changed much. I haven't changed anything in terms of the food side of things. But, in terms of my drinking habit – I've reduced a bit! Though, I'm still drinking.

Regressive behaviour by HIV+ employees is reported by other interviewees (CF6, CF9, CF10), who point to a need for a 'hard love' approach by excluding persistently non-compliant employees from company treatment programmes. However, the potential consequences of such sanctions should be made explicit in the organizations' HIV/AIDS policies and communicated clearly to employees, while at the same time reinforcing the value placed upon the well-being of all employees. The same three firms point out that excluding employees on these grounds is difficult and none had done so as a permanent measure. The support HIV+ employees receive from their families is an important influence on treatment programme compliance, and construction firms could usefully consider ways to encourage and foster this.

Firm/Organization-level considerations

Although the smaller firms interviewed emphasize that they are taking into consideration the needs of the employees, as the relationship between workers and management is perceived to be close (even familial), they must be careful about making assumptions. A certain degree of formalization will help ensure that employees become aware of what options are available to them. It reinforces the gravity of the situation and the serious regard in which it is held by the employer. Serious intent by the firm may then be matched by willingness to participate on the part of employees. They may feel encouraged to adhere to and comply with treatment programmes. Strong HIV/AIDS policies are therefore an essential starting point, and made even more appropriate where they are incorporated into a wider employee well-being approach. However, employees must be made fully aware of the content and meaning of policies. Given the language diversity in South Africa, and the educational limitations of less-skilled workers, clear communication

here is vital. Interviewees also point to the desirability of a consultative approach in formulating (and subsequently reviewing) policies targeted at employees (CF3, CF6, CF9).

The support of a 'champion' emerges as a powerful contributor to the success and effectiveness of HIV/AIDS intervention management in a firm (CF6, CF10). While active involvement of HR managers is vital, the best success driver is found in the enthusiastic and ongoing commitment of senior management at the director level. This not only confirms recognition and acknowledgement of the disease as a threat to the firm, but also demonstrates a caring attitude and creates a smoother and faster path to policy formulation and implementation, budgeting and auditing processes. Devolving intervention responsibility to lower levels of management may not be effective, particularly if a consequent lack of authority leads to staff frustration.

Realistic budgeting for intervention management is essential. The possible discontinuation of the PEPFAR funding now complicates this task, unless an external service provider is asked to provide a full fee-for-service tender option. The frequency of testing interventions is an important consideration here. Budgeting for poster awareness campaigns, 'toolbox' meetings and condom dispensing should be straightforward and inexpensive, but companies have to decide where, how often, and by whom counselling and testing should be undertaken, as these are the main interventions previously subsidized by external funding. Realistic options include service provider assistance; in-house interventions conducted bi-annually; or combining these interventions with annual OH&S medical compliance examinations (for all workers and not just equipment operators). Interviewees' responses suggest that a comprehensive annual budget, covering all campaign, annual testing and treatment programme interventions, ARVs, vitamin and dietary supplementation and prescribed medical examinations, administered to all employees (permanent monthly paid, permanent hourly paid and temporary contract workers) should not exceed 0.4% of annual turnover (assuming an infection prevalence rate of 8% and the economies of scale available to large organizations). This provides at least a starting target:

> CF6: … about half a million Rands for the year.
>
> CF9: We've gone slightly over our seventy thousand annual budget. But it's not a hundred thousand yet. So I'm not really worried …
>
> CF10: … about six hundred thousand a year, but it also includes the salary and operational costs of the full time facilitator.
>
> SP1: … a good [private] programme, that's going keep your employee adherent – about ten thousand Rands [per treated patient] a year …
>
> (Note: UKPounds 1 = ZARands 15.89; US$1 = ZARands 9.98; as at October 2013)

While organizations can encourage employee disclosure of HIV/AIDS status, it is impossible to enforce it; but without disclosure the effectiveness of workplace interventions is undermined. Non-disclosure weakens firms' efforts to put in place effective formal organizational intervention programmes. Indeed, given employee reluctance to disclose status, employers might blindly arrange to put into place interventions without knowing exactly which, or how many, employees needed help.

Fear, stigmatization and trust are the issues underlying employee reluctance to disclose, and these have to be addressed at all levels. Ensuring confidentiality is a starting point but is difficult to maintain:

> SP1: … when we start off treating people, we maintain strict confidentiality.
>
> CF11: … if you turn around and say, well, tell us who you are and we can help you, where's your confidentiality gone? Because now your accounts department staff are going to know, because they're going to know who they're paying, so you actually throw the whole thing out.

Clear sanctions for breach of employee confidentiality and incidents of discrimination should be in place as a policy directive, and applied strictly should the occasion arise:

> CF4: Any form of discrimination is not tolerated and is met with harsh consequences. Any form of discrimination.

The same approach can be taken for stigmatization occurring within the organization, but all this may be easier said than done. The interviewee for CF9 notes that site supervisors will often quickly become aware of HIV+ workers as their working hours are affected by the need to attend clinics for treatment. Interviewees point to the sensitivity of these issues, with some offering this as a reason for not implementing HIV/AIDS interventions. Stigmatization occurring beyond the firm is an issue for society itself and must be addressed at a national level.

Assistance to families of HIV+ employees is another way of demonstrating commitment and developing trust. If the employee is the sole breadwinner for the family, support assistance can be crucial, at least during periods when the employee is unable to work or paid hours are reduced (usually before ARV medication

takes effect). Company policies could carefully frame the conditions for assistance. Firms should look beyond the basic issue of cost. Greater cultural awareness would allow firms to appreciate that assisting dependent families over the longer period of a breadwinner's treatment programme could give them more time and capacity to prepare financially for inevitable death. Such assistance need not necessarily be in the form of direct cash payments. Food vouchers and vitamin supplementation would help to sustain the health of the whole family, while school vouchers would help with the vital continuation of education for children who may end up with overwhelming responsibility:

> CF8: … the secondary result is child-headed families. Those children then can't attend school because they're looking after their siblings.

Industry-level considerations

At the construction industry level, HIV/AIDS intervention activity is likely to be indirect, advisory and supportive.

Collaboration between employer representative associations and worker representative unions is needed. Peak industry representative bodies (contractor associations and unions) should together form a high-level industry forum to consider, advise and lobby on all matters pertaining to the health of employees, but especially HIV/AIDS.

The Building Industry Bargaining Council (BIBC), a collective bargaining forum, currently exists where organized labour (as represented by trade unions) negotiates wages and conditions of employment with the organized employer bodies (the provincial Master Builders Associations (MBAs)). Depending upon the category of the employee (labourer, general worker or artisan) the BIBC administers either a 'sick fund' or a full medical aid scheme. Employees need to have a minimum amount of benefit stamps (one stamp is issued for every shift worked) in order to qualify for these benefits, but payments available for HIV/AIDS expenses, outside the full medical aid schemes, are very limited. Civil engineering contractors who are not MBA-registered do not participate in the BIBC scheme.

The opinions of firms and employees should be gathered, in order to inform the development and improvement of guideline policies and templates for intervention. Construction organizations offering effective HIV/AIDS intervention management should be encouraged (and supported by industry bodies) to act as role models and mentors for smaller or less successful firms. Interview responses from CF6, CF9 and CF10 indicate a willingness to undertake this assistance role, and here a peak industry forum could provide leadership.

Joint approaches to the design and dissemination of awareness and prevention campaign media could be undertaken, especially as the effectiveness of poster campaigns is linked to their frequency of refreshment. Opportunities should be exploited to lobby for state government improvements to public health services and facilities.

Effort at this level should also focus on two structural aspects of the industry: the conditions of engagement for construction workers; and reaching out to the informal sector.

State-level considerations

The state government must continually reconsider its role and responsibilities in dealing with the HIV/AIDS pandemic. Calling upon the private sector to play its part is appropriate, but that alone will still not be enough. The government should reframe its policies for public health so that HIV/AIDS intervention is enshrined within a more holistic public well-being approach.

At state level, COIDA (Compensation for Occupational Injuries and Diseases Act, No. 130 of 1993 as amended) (Republic of South Africa, 1993b) legislation has replaced the old Workman's Compensation Act in South Africa, but does not properly cover treatment or compensation for HIV/AIDS-related illness. This scheme, and the industry-based BIBC scheme, should be harmonized, with all workers eligible regardless of skills classification and employment status. Universal industry-based health insurance schemes, particularly with 'portability' for contract workers, could be explored.

State action is hampered by lack of information about the real magnitude of the pandemic. National prevalence estimates are made on the basis of the diagnostic and case loads of public hospitals and clinics. Since reporting by the private sector is not mandatory, the adequacy and accuracy of these estimates cannot be reliably checked. While tuberculosis (TB) is a reportable illness, in reality it is often the outcome of low immunity stemming from HIV/AIDS infection, and in many instances is used as the stated cause of death, thus further masking true HIV/AIDS prevalence rates. Since an association between the two diseases is not inevitable, the possibility of further estimating error arises. Mandatory reporting of positive HIV/AIDS diagnoses would provide more certain information, thus helping government decision making. While the

massive sensitivity surrounding the stigma associated with HIV/AIDS disclosure has been the main reason for government reluctance to introduce mandatory reporting, it must be acknowledged that this may be too big a price when set against the ravages of a disease left untreated or unchecked.

The government should also give more attention to encouraging disclosure, minimizing stigma, and demolishing the cultural myths surrounding HIV/AIDS – particularly those associated with its prevention and cure. Effective communication across all language groups (11 official languages) will play a vital and critical part in addressing these issues.

Finally, the government must continue a relentless programme of public health services improvement in terms of the extent and quality of services.

Guidelines for HIV/AIDS intervention management by construction firms

The research findings are framed here as an interrogative 'A to Z' series of questions (guidelines) that construction firms should address when considering the implementation of HIV/AIDS workplace interventions (see Table 4). The concomitant thematic issues emerging for other stakeholders (construction employees; industry and state) are shown in separate columns in Table 4 against each guiding question. Individual construction firms, however, are shown prominently since they must inevitably be the 'heavy lifters' in HIV/AIDS workplace intervention management.

Before drawing conclusions and discussing further research directions, attention is given to the trustworthiness of the research.

Trustworthiness of the study

The 'trustworthiness' of the study is examined in terms of the perspectives offered by Lincoln and Guba (1985) in relation to naturalist inquiry: credibility, transferability, dependability and confirmability. These are the naturalist's equivalents of the positivistic internal validation, external validation, reliability and objectivity (Creswell, 2007).

Credibility

Implementation of the credibility criterion is twofold. First, care was taken in the inquiry to promote the likelihood of the findings being found credible (Lincoln and Guba, 1985). Secondly, the credibility of the findings is demonstrated by having them approved by the constructors of the realities being studied (Lincoln and Guba, 1985). The study minimized bias, from the researchers and respondents, as much as possible. It is important that this bias is not masked and is transparent. As the findings emerged from the data through a systematic process of thematic analysis, the findings may be taken to be credible, particularly as the veracity of transcripts was confirmed with interviewees. Sampling bias (see Babbie and Mouton, 2001) may also affect the credibility of the research if the respondents that are selected are not representative of the population interviewed. The sampling was a combination of purposive and convenience sampling, ensuring that a range of differently sized firms were selected.

Interviewees may provide responses that sound socially desirable to the interviewer. This may occur where a firm does not wish to look as if it is doing nothing, or not meeting its standards, especially with an issue as serious and sensitive as HIV/AIDS. The interview transcripts from the 12 cases demonstrate that the responses were honest, as firms were quick to explain if they did not have a formal HIV/AIDS policy or treatment programme in place. While the problem of respondents answering 'to sound good' is reportedly present in all face-to-face interviews (Babbie and Mouton, 2001), it was not unduly evident in this research.

Transferability

The problems associated with the establishment of transferability within naturalistic enquiry are well documented (see Lincoln and Guba, 1985). The database required to make transferability judgements possible, on the part of potential appliers, needs to be provided (Lincoln and Guba, 1985). The findings and assertions emanating from this study correspond with their empirical context. Moreover, they provide an explanation of this context and address the problems and processes within that context. The findings and assertions are considered potentially transferable to other contexts; they are considered sufficiently flexible to allow for variation over time.

Dependability

Using a similar interview format throughout the interview process enhanced the consistency of the research process. The flexibility of the semi-structured *aide-mémoire* allowed for the emergence of issues within each interview that had not been presupposed by the interviewees. Such a context-specific approach is important in qualitative studies. An internal audit was undertaken by the research team to enhance the fidelity of both the process and the product (Lincoln and

Table 4 An A to Z set of interrogative guidelines for HIV/AIDS intervention management in construction organizations (with concomitant employee, industry and state-level theme issues)

	Construction firm/organization	Construction employee	Construction industry (association/union)	State level
(a)	Is there an HIV/AIDS intervention 'champion' at a sufficiently high level in the organization?		Industry support lobby and member pressure. Mentoring schemes	
(b)	Is a formal HIV/AIDS policy in place?		Provide documentation templates	Codes of practice
(c)	Is the HIV/AIDS policy motivated by corporate social responsibility?		Information kits	Information and encouragement
(d)	Does the policy form part of a wider employee well-being approach?		Information campaigns. Health insurance schemes	Harmonization of legislation. Compulsory/ transferable health insurance
(e)	Is the HIV/AIDS policy aligned with the needs of the workforce?	Feedback to employer		
(f)	Have employees participated in policy formulation?	Participation		
(g)	Is the content of the HIV/AIDS policy transparent?		Multiple language templates	
(h)	Are employees' expectations of the HIV/AIDS policy actualized?	Feedback to employer	Monitoring	Review
(i)	How frequently will policy review be undertaken?		Monitoring	
(j)	How will employees' value of the HIV/AIDS interventions be measured?	Feedback	Monitoring	Metrics
(k)	How will confidentiality be safeguarded and breaches dealt with?	Trust development	Measures advice	
(l)	Do the intervention activities include: • awareness and prevention campaigns (information pamphlets, warning posters, peer educator training, 'toolbox' discussions, education workshops, condom promotion and dispensing); • peer educator counselling and voluntary testing; • referral to public clinics or a formal in-house treatment programme?	Participation. Adherence to treatment programmes. Avoidance of substance abuse	Industry campaign media material. Training material. Condom subsidization	National media campaigns. Simplify public health service referral. Mandatory reporting. Funding support for different intervention activities
(m)	Does the construction firm have an adequate annual HIV/AIDS interventions budget?		Budgetary advice	Additional tax offset concession
(n)	Will interventions be partially or fully integrated with prescribed medical assessment carried out in terms of existing health and safety legislation?			Harmonization of legislation
(o)	How frequently will awareness campaigns, peer education, counselling and voluntary testing interventions be undertaken?		Information and advice	Information and advice
(p)	Will any distinction be made between permanent employees and temporary		Industry structural change development.	

(*Continued*)

Table 4 (Continued)

	Construction firm/organization	Construction employee	Construction industry (association/union)	State level
	contract workers, and subcontractors, for some or all interventions?		Reach into informal sector	Industry economic and structural reform agenda
(q)	Will employees be given assistance and time off for HIV/AIDS clinic treatment?	Cooperation with work schedules		
(r)	Will vitamin, immune booster and dietary supplementation be offered?			Authorized supplementation subsidies
(s)	Will lighter duties be arranged for sick workers?	Honesty and trust		
(t)	Will the construction firm partner with an external service provider to implement some or all interventions?		Industry preferred provider information	Tax benefits to authorized providers. Disease reporting requirements
(u)	How will interventions be managed for workers on remote sites?		Mentor advice	Distance cost subsidization
(v)	Will interventions take cognizance of the negative impact of stigma, and (if so) how will the effects be mitigated?	Participation in workshops	Information campaigns. Workshop assistance and provision	Campaigns to dispel cultural myths and mitigate stigma
(w)	Are interventions culturally appropriate in terms of sensitivity and language?	Feedback	Information, advice, and workshops	Codes of practice
(x)	Will contract workers be offered any extension of treatment programme assistance after their period of employment?	Adherence to programmes	Planning help. Worker registration schemes	Subsidies for treatment extensions
(y)	Will sanctions be applied to employees who do not adhere to treatment programme regimes?	Avoid sanctions with lifestyle change and family support	Best practice information	Codes of practice
(z)	Will assistance be provided to families of sick employees?	Honesty and trust	Best practice information	Best practice information

Guba, 1985). In addition, consistency in the coding process was achieved via the constant comparison of the emerging codes and re-reading of the interview transcripts.

Confirmability

Confirmability was enhanced by keeping a reflexive journal (reflexivity) (Lincoln and Guba, 1985). Prior to the data coding process, the three researchers most closely involved with the actual interviewing process met as a debriefing exercise to reflect on the nature and content of the interviews. Reflexivity is especially relevant with issues of bias stemming from the coding process. To deal with this, the coder for the interview transcripts recorded her thoughts in a journal and made notes on memos attached to the text in the NVivo program. These were discussed by the research team. The code hierarchies were also refined and discussed to ensure that they were coherent, as a measure of verification. The coder constantly referred back to the original text to ensure that the iterative process of qualitative research was maintained. Certain words and their synonyms were searched on the NVivo program to ensure that parts of the text were not left un-coded where particular codes were relevant.

While the results flowing from this study provide a better understanding of HIV/AIDS interventions in firms, and may reflect general practices across similar firms, additional research that covers a wider cross-section of (representative) firms is needed for reliable generalization of the results. Contextual differences between cases militate against generalization (Lincoln and Guba, 1985; Creswell, 2007).

In light of the above, the findings and assertions emanating from this study are considered trustworthy.

Conclusions and recommendations

The key research aim was to develop a better understanding of HIV/AIDS interventions in construction

firms in a particular region of South Africa. Several conclusions emerge from the study. First, at an organization level, comparatively few firms extend workplace interventions beyond awareness and prevention. Greater involvement of firms (directly or indirectly) in treatment provision is required. HIV/AIDS policies need to be compiled and implemented. Interventions will only be successful if employees perceive them to be desirable and trustworthy. Second, employees need to be involved in intervention management. Third, there appears to be a clear link between the presence of a champion within the organization and the effectiveness of its intervention programme. Fourth, fear, stigmatization and lack of trust underlie employees' reluctance to disclose. Ensuring confidentiality is paramount in this regard. Fifth, in many firms a tension exists between production imperatives and corporate social responsibility. Sixth, realistic budgeting is essential for effective intervention management but this is now complicated by the possible discontinuation of PEPFAR funding. Seventh, at an industry level, collaboration between employer representative associations and worker representative unions is needed to promote more effective intervention responses. Eighth, firms successful at intervention management should be encouraged to mentor smaller, less successful firms. Finally, at a state level, government must reconsider its role and responsibilities towards the pandemic: harnessing the help of the private sector needs to be accompanied by measures that facilitate and enhance the effectiveness of such participation.

The research findings have led to guidelines by which potentially more effective workplace HIV/AIDS intervention management can be implemented by construction firms committed to the task (Table 4). The thematic analysis of 'rich' data sourced from interviews with representatives of 12 construction firms has informed these guidelines.

The findings extend considerably the knowledge gained from earlier survey research. Major outcomes of the research have revealed the importance of 'champions' in intervention management, and for strong clear policies at the organization level that reflect a commitment to the overall well-being of employees. There is a need to deal with issues relating to equity, stigma, disclosure and communication. Mentoring could be adopted to encourage wider implementation of effective interventions. The informal sector of the construction industry should be reached, and a harmonized approach encouraged at industry level and nationally.

Few of these are short-term initiatives, but action is needed now if containment of the pandemic and its impact on the industry is to be achieved in the longer term.

Further research

This study has opened paths to more extensive research.

The workplace HIV/AIDS interventions guidelines presented in the study should be tested through action research with construction firms. This can be modelled on the behaviour of the three actively successful firms identified in the study (CF6, CF9 and CF10).

To align workplace policies with practices, employees' needs and values must be considered. A potential avenue for study could consider participatory methods in aligning workplace policy and practice. There is extensive literature surrounding participatory methods and how they can be used to challenge and change power dynamics, empower participants and bring about more responsive institutions (see Cleaver, 1999; Williams, 2004).

The research has also pointed to a need to consider the more vulnerable people in the industry: temporary contract workers, who are rarely the full recipients of the potential treatment proposed by the intervention guidelines. More research is needed to explore the experiences of these workers, through in-depth interviews, in order to understand their situation with respect to HIV/AIDS. The language resources required will complicate this task. Efforts will have to be made at all levels (organization, industry and state) to find a solution that will alleviate the more precarious position of contract workers, whether by setting aside funds for assisting unemployed contract workers, or working together to make the market more stable and accessible to these workers.

The actual effectiveness of the messages conveyed in the HIV/AIDS awareness and prevention workshops should be explored. This communication research could include an analysis of the semiotics associated with HIV/AIDS-related texts given to the employees and the extent to which shared meaning is attained.

The next phase of this research envisages further quantitative surveys to examine particular aspects of stigmatization and disclosure with respect to HIV/AIDS at the individual employee level. These two issues are critical in the fight against the pandemic. This research will be conducted in collaboration with the Human Sciences Research Council (HSRC). Parallel research will investigate associated communication issues. Given the availability of funding and resources, action research (reverting to the organization level) is then planned to explore the practicality of employing various tools to address stigma and disclosure from a communication perspective.

Further ahead, an attempt will be made to engage with the informal construction sector to ascertain its special needs and ways to deliver appropriate help. This

will not be easy. It is incumbent upon the formal sector to first provide an effective response model for the whole industry, and for the industry itself to then promote mentoring opportunities between formal and informal builders. Ideally this will be done in conjunction with government-led initiatives.

Acknowledgements

This work is based on the research supported in part by the National Research Foundation (NRF) of South Africa (Grant specific unique reference number (UID) 85376). The Grantholder acknowledges that opinions, findings and conclusions or recommendations expressed in any publication generated by the NRF-supported research are that of the author(s), and that the NRF accepts no liability whatsoever in this regard. Grateful thanks are extended to Professor David Lincoln, Department of Sociology, University of Cape Town, and Professor Sam Laryea, School of Construction Economics and Management, University of the Witwatersrand, for their guidance in grappling with the nuances of qualitative research; much appreciated.

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