



Clinical Waste Discussion Forum

An occasional newsletter from the *Clinical Waste Discussion Forum*

Visit us at <http://www.ianblenkarn.com>

Number 15: December 2010

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Please support the *Clinical Waste Discussion Forum*

Tell your colleagues, display this Newsletter or make it available to others, and put a link on your own web site



A warm welcome to the latest edition of the *Clinical Waste Discussion Forum* Newsletter. It will be distributed by email to those who have signed up for a copy at <http://www.ianblenkarn.com>, and will be posted on that web site for download by others who may wish to read it.

While bringing you the usual Season's Greetings, we bring news of the successful re-writing of the *Clinical Waste Discussion Forum* code to deliver a new, brighter and far more robust system that should be free of unwanted and most unwelcome spam messages

At the time of writing, the 2010 revision of HTM 07:01 is imminent. We will be reviewing that document in great detail, and offering thoughts about the content, and indeed about its production with a detailed review of the consultation process. Last time there was much rumbling, including open comment from some of those who took part in the drafting of HTM 07:01 that the entire process was railroaded by individuals from the Environment Agency to create a document that was in their image.

There are important omissions and several serious errors in the consultation draft that impact of bio-safety and waste management procedures in healthcare activities. These were flagged during the consultation process – did anyone listen, or was the consultation once again just a token gesture?

Clinical Waste Discussion Forum

Our newly rewritten website and the *Clinical Waste Discussion Forum* is now fully operational, giving a refreshingly spam-free facility.

You will find much of interest in the new *Forum* – old *Forum* posts have been secured and are available as a read-only archive – and will be able to add your comments to any post. Registered users can once more post their own messages, to create a free information exchange for all of those involved with, concerned about or affected by any aspect of healthcare waste management.



Season's Greetings

from

Blenkarn Environmental

and the

Clinical Waste Discussion Forum

Recently in the *Clinical Waste Discussion Forum*

Where did all the yellow sacks go?

Some people will remember the appearance of yellow clinical waste sacks in litter bins on railway stations across central and eastern Scotland some years ago. Purchased by “mistake” – no doubt the mistake was actually a cheap deal too good to miss – this created problems all over the country. It took months to correct the error, and for many months after that the odd yellow sack turned up from the back of various station store cupboards.

The problem has now recurred, this time in the north west of England. We can only guess at the cause, but this may be an attempt by a supply to offload supplies of yellow sacks as the market stalls having changed to orange.

<http://www.ianblenkarn.com/?p=749>

Where have all the needles gone?

Data for Western Australia shows that, through needles and syringe programs (NSPs), around 3.5 million needles & syringes are distributed annually. Most of these go to IV drug users (IDUs). Nationally, the number is around 30,000,000 syringes annually.

But where do all of those syringes and needles go? There is no national policy or guideline for disposal, and each regional or local authority is left to make its own arrangements. This results in substantial variation in approach, and comparing output and recovery data will show a huge mismatch suggesting that many syringes and needles ‘go missing’.

The UK has a population around 3x that of Australia, and proportionally as many syringes and needles going out into the community. How many come back safely packaged in a sharps bin?

Regulators must be tasked to implement and supervise this policy, without a heavy administrative overhead or unnecessary bureaucracy, using existing output and recovery data to monitor performance. It’s a big task, though need not be too difficult. But don’t hold your breath waiting for it to happen!



<http://www.ianblenkarn.com>

Other news for the Forum



News of a “dangerous” Medical Materials Recycling factory operating in Jeddah caused some surprise. To address unspecified safety concerns that seem to involve atmospheric releases the response was [to move the factory](#). Simple! _____

Are sanitary/offensive wastes appropriate for [separate collection and disposal](#)? To date, the answer has been a resounding yes, though putting it into Tiger bags for landfill is irrational when better options such as anaerobic digestion and biogas production exist.

But now, relaxation – informal or otherwise – that allows Local Authorities to divert sanitary/offensive wastes to the domestic waste stream seems inappropriate. If statistics for waste production are important – often hailed as a key to effective operation of EA waste reporting, as well as an effective tool in regulation – then the statistics are now lost.

If the regulatory framework has been revised, then everything falls to risk assessment. When infection follows contact with black bag waste containing sanitary/offensive wastes, who is to blame? It will probably fall to those who failed to perform a suitable & satisfactory risk assessment, though if truth be told it should be those who drafted such a leaky waste framework that is ripe for manipulation. _____

<http://www.ianblenkarn.com/?p=846>

Finally, a bit of !*#?*& culture?

Having previously reported the song title “Infectious Hospital Waste” by the group Demolition Hammer, a thrash metal band from the Bronx, New York, we now add news of the another group, [“Sharps Injury”](#)!

Try out their music, but do maintain a suitable standard of sharps safety and injury protection – be sure to keep the sound turned down!

Also in the news.....

Operator safety

Ian has recently proposed, *via* the CIWM Health & Safety Special Interest Group (SIG), production of a series of leaflets covering key risks and approaches to injury and accident prevention for waste industry operators.

Those leaflets will address a range of key safety issues including road and transport-related safety, slips and trips, hygiene, PPE use etc. Comprising bulleted lists of key points, they would be supported by pictograms, and crucially will be available in a number of languages. Their purpose is not the '*be-all and end-all*' of staff induction and safety training, but to support and reinforce that training in the hope of improving industry-wide safety, particularly for those staff for whom English is not the first language.

With the other members of the CIWM H&S SIG, we will do all we can to put this idea into place and find support for production of a comprehensive range of leaflets. They can hopefully be made available at low cost to supervisors and H&S staff across the waste industries, either as printed leaflets or as downloadable files.

Waste safety training passport scheme

Accident prevention in the waste sector is a key requirement; accident & injury rates remain high and annual mortality figures cast a heavy shadow over the industry. Despite existing training and certification schemes, further advantage might be obtained through the development and introduction of a **waste safety training passport scheme**.

This might include a simple written record for every employee giving some simple details and date of induction or safety training, *and of safety training updates*. Not intended as a substitute for induction training, subjects might include slips & trips, machinery- or vehicle-related hazards, transport issues, basic hygiene, PPE use etc.

As always for developments of this kind, and in line with the policy of [Blenkharn Environmental](http://www.ianblenkarn.com) to all advances of safety standards, this proposal is placed into the public domain for non-commercial development. *But, remember you heard of it here first!*

HTM 07-01 revision

The much needed revision of HTM 07-01 has been out for consultation. Unfortunately bloated now to around 200 pages it is to be hoped that many of the more serious errors and omissions have now been addressed. The key areas of change include:

- Updates to legislation, specifically for environmental permitting and transport regulations
- Focus on the waste hierarchy through procurement practices, eliminating, minimising, recycling and recovery of waste
- Drive to address the carbon impact related to waste through resource efficiency, transport impacts and disposal arrangements
- Integration of new sector guides on GPs and dental practices as well as incorporating HTM07.06 on community pharmacies as a sector guide
- Focus on practical advice and examples for classifying waste in particular the infectious and offensive waste streams, including case studies to highlight best practice

Ian had prepared a response on behalf of the [Infection Prevention Society](http://www.infection-prevention-society.org), and a separate response from [Blenkharn Environmental](http://www.blenkharn.com). He will be happy to discuss with others, via the **Clinical Waste Discussion Forum** or directly, the issues involved and the formulation of a comprehensive response to the substantive HTM 07-01 document

We must hope that the consultation exercise has this time been much more open and honest, and not railroaded by those who wish to manipulate the process for their own advantage. This time, the issues raised during consultation should have been properly assessed in a fully transparent manner and properly considered for incorporation in the final version. Time will tell.

Research in progress

The [not quite] annual clinical waste survey

This annual, well almost annual, survey of clinical waste management standards in UK hospitals will take place soon, but *Shhhhh*, don't tell anyone?

Well, we are not going to say exactly when, in part because dates have yet to be finalised and, of course, to avoid any pre-emptive clean-up of the 25 hospitals included in these audits.

Though we had proposed Q3 2010 it is now inevitable that due to other workload pressures, completion is unlikely before Q1 2011 or possibly later.

Clinical wastes in the community

We have been successful in identifying widely variable standards of clinical waste management from community sources and have provided the necessary push to many Local Authorities to improve their services

and clarify the information that they make available to professionals and to members of the public.

These studies, of domestic clinical wastes and of discarded drug litter, will be updated in Q4 2010 and the results are expected some time in 2011.

Audit has been completed though these results are not as yet fully analysed. Key points so far – subject to review after final detailed analysis – include:

- Several Local Authorities demanding wastes, including sharps bins, to be left outside by 6.30am on the day of collection. This contradicts all safety and waste security guidance, and is clearly inappropriate
- Around 85% of those Local Authorities who state which bag colour codes are in use specify yellow sacks for clinical waste in circumstances where orange would be the appropriate choice.
- If this is a simple failure to update web information then time, since the 2005/6 audit, has surely been adequate to prevent the confusion that this may cause!
- Many Local Authorities insist that used sharps are never put into glass bottles (risk of breakage) or drinks cans (sharps penetrating thin can walls or cans and needles turning up on picking lines), but many others recommend plastic bottles or drinks cans for temporary storage. Some even contradict their own safety advice and make both statements, on the same information page!
- Safety information, where given, is incomplete, sometimes inappropriate and often contradictory.
- While referring to a risk of infection and urging those finding discarded needles not to touch these dangerous items, many go on to invite the public to pick up these sharps and keep them for later collection, This is surely a recipe for disaster, or at least a substantial and costly claim!
- Safety advice that extends to the steps to take if injured by a discarded sharp is often inadequate – the most serious error is to downplay the importance of speed in seeking specialist medical attention. Post-exposure HIV prophylaxis is most effective if given within just 2 hours of exposure, and the urgency of seeking medical attention is paramount. Advising members of the public to go to A&E or call NHS Direct is a good first step, but recommendations to see your GP, when it may take many days to get an appointment, is woefully inadequate and almost certainly actionable.

More information will be made available when the analysis is complete, and following final publication of the audit results. Reprints will be made available after publication.

Do you want to get involved?

These and many other studies are in progress at [Blenkharn Environmental](http://www.ianblenkarn.com).

We receive many requests from students and others wanting training advice or support and guidance. Many of those want to join us in a research study in the hope of peer-review publication.

There are usually opportunities for co-operative study, from those working in the community, in Local Authorities, in healthcare establishments and in the disposal sector. Please do get in touch at enquiries@ianblenkarn.com

SciTopic Clinical Waste page

The SciTopics page on the subject of clinical wastes continues to get many hits daily, and is generating quite a lot of comment and correspondence.



SciTopics is a free expert-generated knowledge-sharing service for the scientific community. Developed to serve as an information and collaboration service for researchers, SciTopics offers authors a dynamic, quick, informal yet authoritative online publication platform.

SciTopic pages are “a freely accessible, wiki-like service for the scientific community where scientific experts summarize specific scientific topics, and where links to the latest, most relevant journal literature and web sources are presented on one page. Authors are invited based on the merit of their published research and will always be a scholar who is known and respected in the field”.

The SciTopic Clinical Waste page is accessible at http://www.scitopics.com/Clinical_waste.html

The page is updated regularly. Take a look, and at the many other subject pages available at <http://www.scitopics.com/>



Writing for the Clinical Waste Discussion Forum Newsletter

The **Clinical Waste Discussion Forum** and this Newsletter exist for its users and readers, all of them, whatever their background, experience or interests.

We welcome every contribution to the **Forum**, and invite contributions to this Newsletter. This month, we are fortunate to have two additional contributors. James Geary of Cliniserve Limited discusses the difficulties caused in disposal by new legislation, that introduces substantial complexity, uncertainty and, perhaps inevitably, massive increases in the cost of compliance. We are also pleased to hear from David Ritchie, who gives us a detailed overview of the recent changes to the regulations governing vehicles carrying dangerous goods and the new rules regarding driver training.

Do you want to add your mark, add your voice, or simply get it off your chest? Hit the keyboard and place an entry in the **Clinical Waste Discussion Forum** , or email to discuss a publication in the Newsletter.

moderator@ianblenkarn.com

Encyclopedia of Environmental Health

We contributed a chapter of **Clinical Waste Management** to the Elsevier Encyclopedia of Environmental Health back in 2009. This is STILL in proofs stage – I guess not all contributors were as quick to submit – but is still scheduled to appear in print in Q1 2011. Don't hold your breath.....

We are negotiating permission for royalty- and license-free distribution to interested readers via the **Clinical Waste Discussion Forum** and [Blenkarn Environmental](#) web sites. More details next time.

Spam messages in the Forum

The crippling spam activity that we suffered on the old **Clinical Waste Discussion Forum** is no hopefully fixed. After an abortive attempt at modification of the site architecture we have completely re-written the code using WordPress and this seems to have been 100% successful.

WordPress traps spam messages and requires that all posts and comments are first reviewed by an administrator to ensure nothing unpleasant slips through.



Detecting blood traces – a unique and specific bio-safety assessment

[Blenkharn Environmental](#) has developed and is now expanding its use of sensitive forensic techniques to the detection of blood traces associated with clinical waste operations.

Field studies demonstrate blood traces of the external surfaces of individual waste sacks and sharps bins, and the area in which they had stood. Even close inspection may fail to detect blood splashes, while these otherwise undetectable splashes compromise hygiene and safety.

The technique can be used in many ways, but one of the most valuable is to assess site and process hygiene, and to provide the necessary evidence that supports training and behavioural change in hygiene standards of waste handlers.



ATT Proof of Process and Ranging Studies

[Blenkharn Environmental](#) is developing a system for ranging of performance of ATT systems that might be used prior to definitive spore testing for validation or re-validation.

Based on a recognised MPN statistical assessment, these ranging studies indicate to operators if their system is performing well and if not, how far from the required performance level their system operates at. This approach will be of value also when a change of feedstock is proposed or load geometries are changed.

Where failure to achieve the required performance standard is likely, the results of ranging studies that define the extent or degree of under-performance provide useful predictive data that will assist engineers evaluate plant prior to the much more costly definitive testing required by the regulatory agencies. Taking just one day (2 cycles) to perform, with results available within 2-3 days, this can avoid the considerable expense of more comprehensive testing in circumstances where failure is likely and allow for remedial works to be assessed at low cost before substantive testing.

More details will appear at <http://www.ianblenkarn.com> when test validation and negotiation with technical collaborators and suppliers is complete.

For more information, contact enquiries@ianblenkarn.com

Rapid *Geobacillus stearothermophilus* spore testing: results in 24 hours

[Blenkharn Environmental](#) has continued to enhance its range of services and is now able to extend its spore testing (sterility) services using *Geobacillus stearothermophilus* spore strips in an enhanced indicator medium that allows reading of results and reporting only 24 hours after receipt of samples.

Rapid testing permits early identification of performance compliance. In the unfortunate event of a test failure, repeat testing can be undertaken and the test results reviewed more quickly, to minimise downtime and prevent disruption.

enquiries@ianblenkarn.com

Clinical Waste Discussion Forum goes global!

The *Clinical Waste Discussion Forum* has an international outlook, bringing together news and views, opinions and oddities from around the world.

We have had, almost since our first few days, an international audience. Web statistics continue to show steady activity, now with a growing number of legitimate visitors from around the world (excluding those wretched spammers!). Everyone is welcome, though most of our visitors seem reluctant to make contributions to the Forum, it is clear that many are using it as a source of information, news, views, ideas....

We are now using ClustrMaps® (<http://www.clustrmaps.com>) to demonstrate visually the extent of our coverage.

Though ClustrMaps® doesn't pick up every visitor, excluding for example those who arrive at a page other than the front page, the system does pick up many of our visitors and is a good measure of coverage.

The map below shows the regions/countries recorded for our visitors from February 2010 – excluding all of those wretched spammers who never go near the site front page and enter directly to the **Discussion Forum** database. Each of the smallest points represent 10 – 100 visitors, while larger points represent >100 or >1,000 visitors, each counted only once per visit per day.

Multiple visitors are indicated by increasing size of the data points. The majority, around 65%, of our visitors are from the UK with many more from France, Belgium and Holland. Within the UK, there is an even split between the midlands and north of England and Scotland, and London and the south.

We are pleased to note many visitors from the US, and from other regions including mainland Europe and Asia, and the Middle East. Everyone is most welcome.



Australia	India	Libyan Arab	Philippines	Switzerland
Belgium	Indonesia	Jamahiriya	Portugal	Tonga
Canada	Iran, Islamic Republic of	Lithuania	Qatar	Trinidad and Tobago
China	Ireland	Malaysia	Russian Federation	Ukraine
Czech Republic	Isle of Man	Mexico	Saudi Arabia	United Arab Emirates
Egypt	Israel	Moldova, Republic of	Serbia	United Kingdom
Europe	Italy	Nepal	Singapore	United States
France	Japan	Netherlands	South Africa	Zambia
Germany	Korea, Republic of	Pakistan	Spain	
Hong Kong	Lesotho	Peru	Sweden	

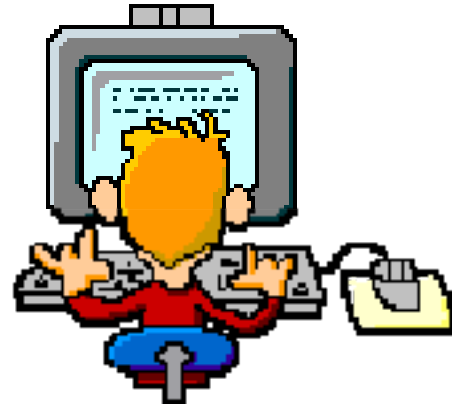
We have been really busy!

The *Clinical Waste Discussion Forum* and its host site Blenkharn Environmental has been completely re-written in recent weeks.

Necessitated by constant spam problems, the entire site has been recreated using WordPress to create a more stable and flexible, user-friendly site and Forum that meets all of our identified needs. This new system creates flexibility for the future and we will be exploring the use of more detailed classification of each posted comment to allow users to browse or move directly to their own areas of interest.

Old posts still accessible

All of the older posts that comprise well in excess of 1,000 messages, comments and commentaries, news and information items, and downloads have been preserved. After conversion, these have been uploaded, as archive files, to the Discussion Forum pages, as read-only files. Unfortunately, the site search system does not at present index these converted old Forum postings but they are available to browse and have a convenient listings page to assist the reader. All downloads are easily accessible.



The cost of transgression?



It is becoming apparent that the costs of transgression are escalating fast. Those found guilty of failing to stay within the legal framework, perhaps for a pollution incident or some safety or compliance/permitting issue, must expect an appropriate penalty set by the Court.

In addition, some compensation payment may apply, again decided on the Court who will listen to the submission of the prosecuting body - in this case the Environment Agency – and their estimate or tally for clean-up costs.

And then there are prosecution costs. These are intended, quite rightly, to reimburse the prosecuting authority the reasonable costs incurred in bringing the case to Court. Recently, costs have escalated, in many cases with a multiplier of 4 times up to 6 or 7 times the level of any fine.

Is that scale of costs appropriate? Probably not, since the comparator of the CPS would suggest a much lower sum is reasonable. Using in-house staff, the whole issue of costs is of itself debatable – this task is the purpose and function of those employees and not an extra cost that should be recoverable through the Courts.

We are currently looking in detail at this whole issue of costs [No, we haven't just been up before the Beak!] and would be pleased to hear from anyone with first-hand experience or ideas on this theme.

Contact ian@ianblenkharn.com in complete confidence

The rules

The rules? Well, there aren't that many.

The first rule is to enjoy the **Forum** and all that it contains! We particularly welcome your input, and your registration to join the mailing list for email delivery of this Newsletter.

The [Clinical Waste Discussion Forum](#) exists for the benefit of its users. It is non-commercial, fully independent, and free for all users. We are pleased to say that the Forum has now been reviewed and accredited by the [Health On the Net Foundation](#), as providing accurate and authoritative information in a fully transparent system. We have delighted to report our recent re-accreditation by the Health on the Net Foundation, for the year beginning June 2008.

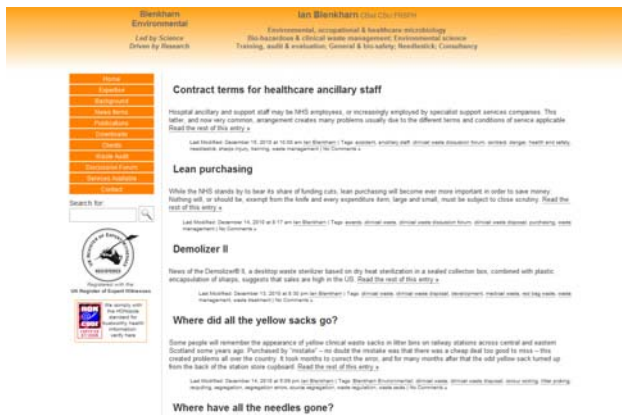
The **Forum** is open to anyone interested in, involved with, or affected by the management of clinical wastes or other healthcare wastes, from their generation to final disposal. No prior registration is required. We hope to provide a unique interface between producers of clinical wastes, scientific, nursing and other special interest groups, equipment manufacturers, waste management companies, representatives of government and government agencies, and all others with an interest in this field. The **Discussion Forum** is an open book.

Please do spread the word, visit the [Clinical Waste Discussion Forum](#), and encourage others to become regular visitors also. Pass on this Newsletter to your colleagues, and encourage their involvement. If you can, please arrange a news item or link on your own/corporate web site. Contribute!



The boring bit!

1. The **Clinical Waste Discussion Forum** is presented "as is". It is intended as an open information exchange, to facilitate the exchange of news, views and opinions. Feel free to post comments, or to offer answers to the questions posted by others. Your opinion and experience will be valuable to others, and we hope that this Forum will provide an easily accessible means to share knowledge, to develop or maintain best practice, and to seek advice from others.
2. We welcome the involvement of all those interested or involved in the handling of clinical wastes and related healthcare wastes, from bedside to end-disposal.
3. At the present time, open posting of messages to the Forum is restricted as part of the spam precautions, though comments to existing posts may be added directly. If you wish to add a new post, news item or other information to the Forum you are free to do so but will have to email the text to moderator@ianblenkarn.com. Subject to the very simple rules explained here, posts will be added to the Forum without delay and without editorial revision. Anonymous posts will be accepted but a name and email address is preferred.
4. Do not duplicate comments unnecessarily.
5. Posted comments are reviewed daily.
6. Anonymous posts are permitted, but we would prefer that you included your name, email address and affiliation when posting messages or replies to messages.
7. To remove any message, please email the [Moderator](#).
8. We place no restriction on users, who are entirely free to post relevant messages and responses to messages.
9. The Forum is not a free advertising service. Though we welcome and support posts from any commercial organisation, blatantly commercial use of this Forum will not be permitted. Any such posts may be subject to editorial change or to rejection. The originators of such posts will be notified of such decisions by email.
10. [Ian Blenkarn](#) of [Blenkarn Environmental](#) publishes this **Clinical Waste Discussion Forum**. We take all reasonable measures to ensure that the information posted in the Forum is accurate. Nevertheless, we give no representation or warranty, whether express or implied, regarding the Forum or its contents, including, without limitation, any warranty of accuracy or completeness of the information posted on the Forum or its contents. Any decision made by a visitor to this Forum based on information presented therein is the sole responsibility of that visitor. Ian Blenkarn and Blenkarn Environmental accept no liability for loss or damage including, without limitation, any special, direct, indirect or consequential loss or damage or other losses or damage of whatsoever nature arising out of or relating to the use of this Forum or its contents.
11. Ian Blenkarn and Blenkarn Environmental will accept no responsibility for any information contained in any other website accessible by hyperlink or by other means from messages posted on this Forum.
12. Editorial decisions are final and absolute.
13. The Forum may be suspended or withdrawn without notice at the sole discretion of the owner.



The **Forum** is free, independent, non-commercial, and non-political – OK, so it's maybe a little bit political but nothing wrong with that. It is also irreverent, often pithy, and sometimes provocative!

It is open to everyone interested in, involved with, or affected by the management of clinical wastes or other healthcare wastes, from their generation to final disposal. Comments can be made in response to any **Forum** post. Registration is now required for those wishing to make their own posts, and although we accept anonymous posts we do ask that you leave your name and email address. Email addresses will NOT be used for any other purpose.

The **Clinical Waste Discussion Forum** is available for everyone. Accessible at <http://www.ianblenkarn.com>, it provides an open forum for the interchange of ideas, and of news and views. Ask a question or post a reply to help others, discuss the latest legislation or technological developments, or smile at some of the more oddball news items from around the world.



Could this be YOUR page?

Have you got a burning issue, some good news, an announcement or some information, perhaps some gossip, that you want to share with others. Well, the first stop must be a message posted to the **Clinical Waste Discussion Forum**. But if you want to follow up with a more detailed entry in this Newsletter, please do get in touch. At present, we can take articles up to about 1,000 words.

There will be a space waiting for your input. The general rules of the **Clinical Waste Discussion Forum** will apply, ie no blatant advertising, honest, decent etc (read *The Boring Bit* on page 9).

Apart from that, please feel free!

[Ian Blenkarn](http://www.ianblenkarn.com)

Some recent publications

Al-Hussaini AK, Shazly TA. Severe ocular injuries from improperly disposed medical syringes in children. *J Pediatr Ophthalmol Strabismus* 2010;47:108-10

Bruce-Chwatt R. The laundry foetus; disposal of human remains, the Anatomy Act 1984 and the Human Tissue Act 2004. *J Forensic Leg Med* 2010;17:229-31

Chattopadhyay D, Bisoi S, Biswas B, Chattopadhyay S. Study of attitude regarding health care waste management among health care providers of a tertiary care hospital in Kolkata. *Indian J Public Health* 2010;54:104-5

Donnellan F, Pankratieva E, Murray FE. What's in the cin bin? *J Hosp Infect* 2010;75:246

Ferreira V, Teixeira MR. Healthcare waste management practices and risk perceptions: Findings from hospitals in the Algarve region, Portugal. *Waste Manag* 2010;30:2657-63

Grimmond T, Bylund S, Anglea C et al. Sharps injury reduction using a sharps container with enhanced engineering: A 28 hospital nonrandomized intervention and cohort study. *Am J Infect Contr* 2010;38:799-805

Gautam V, Thapar R, Sharma M. Biomedical waste management: Incineration vs. environmental safety. *Indian J Med Microbiol* 2010;28:191-2

Haguenoer JM. [Do pharmaceutical waste and drug residue pose a risk to public health?]. *Sante Publique* 2010;22:325-42

James R. Incineration: why this may be the most environmentally sound method of renal healthcare waste disposal. *J Ren Care* 2010;36:161-9

Kudasheva LT, Shudegova EV, Ponomarev SB, Cherenkov AA. [Problems in medical waste handling in penitentiaries] *Gig Sanit* 2010;1:32-5

Kuijjer PP, Sluiter JK, Frings-Dresen MH. Health and safety in waste collection: Towards evidence-based worker health surveillance. *Am J Ind Med* 2010;53:1040-64

Li Q, Liu ZD, Zheng CB. [Investigation on health condition of medical waste disposal workers in one province.] *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi* 2010;28:682-3

Liu Y, Zhu L, Li J. [Research progress of pharmaceutical and personal care products on ecological and human health]. *Wei Sheng Yan Jiu* 2009;38:237-40

Oliveira AM, Maggi RG, Woods CW, Breitschwerdt EB. Suspected needle stick transmission of *Bartonella vinsonii* subspecies *berkhoffii* to a veterinarian. *J Vet Intern Med* 2010;24:1229-32

Ort C, Lawrence MG, Rieckermann J, Joss A. Sampling for pharmaceuticals and personal care products (PPCPs) and illicit drugs in wastewater systems: are your conclusions valid? A critical review. *Environ Sci Technol* 2010;44:6024-35

Pedro E, Lugo-Rosado I, Rojas-Brenes M. Regulations and recommendations for appropriate disposal of antineoplastics. *P R Health Sci J* 2010;29:218-22

Sanida G, Karagiannidis A, Mavidou F, Vartzopoulos D, Moussiopoulos N, Chatzopoulos S. Assessing generated quantities of infectious medical wastes: a case study for a health region administration in Central Macedonia, Greece. *Waste Manag* 2010;30:532-8



Some recent publications

Senft DJ. Increased scrutiny of medication disposal--time to focus on your medication waste management practices. *Geriatr Nurs* 2010;31:126-7

Shafee M, Kasturwar N, Nirupama N. Study of knowledge, attitude and practices regarding biomedical waste among paramedical workers. *Indian J Comm Med* 2010;35:369-70

Soysal A, Simsek H, Soysal D, Alyu F. Management of health-care waste in Izmir, Turkey. *Ann Ist Super Sanita* 2010;46:299-302

Yadavannavar M, Berad AS, Jagirdar P. Biomedical waste management: a study of knowledge, attitude, and practices in a tertiary health care institution in bijapur. *Indian J Comm Med* 2010;35:170-1

Yadavannavar M, Berad AS, Jagirdar P. Biomedical waste management: a study of knowledge, attitude, and practices in a tertiary health care institution in bijapur. *Indian J Comm Med* 2010;35:170-1



Newsletter archive

Back numbers of the **Clinical Waste Discussion Forum** newsletters are available on line at

http://www.ianblenkarn.com/?page_id=636

If you would like to receive your own copy of this **Clinical Waste Discussion Forum Newsletter**, email moderator@ianblenkarn.com, with subscribe in the subject line, or visit http://www.ianblenkarn.com/?page_id=36



And though we will be sorry to see you go, if you no longer want to receive the Newsletter email moderator@ianblenkarn.com, with unsubscribe in the subject line.



All email addresses are held securely and, in line with our privacy policy and with HONCode obligations, we guarantee that email addresses will be used only for Newsletter delivery and will never be passed to any third party.

We will continue to list relevant publications with each issue, but do not pretend to provide a fully comprehensive list. If you are aware of any interesting or informative publications, including Company guides and other publications available for download, that will be of interest to the Clinical Waste community, please put a message on the **Clinical Waste Discussion Forum**.