



CONTINUING EDUCATION: KEEPING IT *HONEST*

by *Sandra McCleaster RRT*

Since time began, drug manufacturers have funded the educational programs that physicians (and many other health care providers) attend to fulfill their licensure or certification requirements. They do so to generate good will by helping continuing education providers and professional organizations defray the costs of their educational programs. At the same time, providers welcome the pharmaceutical company's support in putting their programs together. At first blush, this sounds like a win-win. But now it seems that this comfortable arrangement is being viewed by the federal government with a very jaundiced eye.

The inference, of course, is that big pharma is using its deep pockets not just to shape the prescribing habits of MDs, but to improperly influence the sum and substance of continuing medical education. Undoubtedly, the pharmaceutical industry has a vested interest in selling drugs, their intent is always to expand their markets. Safe to say, the industry probably wouldn't be so generous if it didn't anticipate that its expense would be recouped by increased sales. Therein lies the perceived conflict and it's hardly a new one.

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But only lately has it become the focus of government scrutiny. This past April, the U.S. Senate Finance Committee issued a 106-page report that is shaking up the medical industry and the continuing medical education providers alike.

It certainly seems that the report is causing the pharmaceutical companies some discomfort. There's evidence now that drug manufacturers have moved policies regarding the awarding of educational grants to the front burner. They've actually issued guidelines which put limitations on their influence over the content of medical education. In short, the pharmaceutical industry is attempting to police itself, probably realizing that if it doesn't, big brother is waiting in the wings to do it for them.

The physician continuing medical education system operates under the auspices of an accrediting organization, the Accreditation Council for Continuing Medical Education (ACCME) which interestingly, has published Standards for Commercial Support. But, by its own admission, the ACCME does not closely monitor or investigate programs for compliance, thus the government call for both the ACCME and the FDA to have more active oversight of physicians' continuing medical education programs. One possible outcome of this government interest is that prepared programs may have to be "run by" the FDA in advance. That's a scary thought, if

for no other reason than that it would present a logistical nightmare for anyone with the responsibility of organizing an educational event. Another proposal calls for direct oversight by way of random unannounced monitoring that would take the form of a clinical monitor planting themselves in the audience to assess how or what information is being presented.

What, if any, are the ramifications of this government interest in physicians' CME for the rest of us? Will this have a trickle down effect to continuing education efforts in allied health? Of course, the spoils aren't quite the same for funding the respiratory therapists, nurses, or other health care providers. Unlike physicians, the bedside care providers aren't normally in a position to influence or control what drugs or equipment their patients are prescribed. There is, however, probably no other allied health area so heavily reliant on high tech equipment and associated disposables than is the profession of respiratory care. After the pharmaceutical companies, will mechanical ventilation vendors be next to find themselves in the government cross-hairs? We hope not. The AARC as well as other continuing education sponsors, are taking the issue of potential conflict very seriously. Now, in a pre-emptive measure, in order to gain approval for continuing education credits, conference planners, faculty, and content specialists are being asked to disclose to their audiences if there are any pre-existing relationships with sources of commercial support. All information disclosed must be shared with the audience either via program handouts, advertising or audio-visual materials. The purpose of the disclosure is "transparency" and to make everyone aware that data or information provided by a commercial entity could well be biased to its product.

Some thoughts: Does this mean an equipment manufacturer shouldn't be permitted to provide its own presenters for a conference, lest this be construed as a veiled advertisement for its products? Or seen as exerting improper influence over course content? It seems to me that bias is difficult if not impossible to avoid. And does bias necessarily equate to a "conflict of interest?" Should a presenter not be permitted to have a financial interest relative to the topic? "Experts" are by their very nature, biased. Is it not through their life's work that they have become experts? Obviously, someone has to be paying them to do their jobs.

With the advent of licensure of respiratory care practitioners over the past decade, continuing education has become big business, much of which has been very willingly funded by equipment and consumables manufacturers. The unfortunate fall out of this focus on the pharma industry's role in physician's CME is that equipment manufacturers could become gun shy about funding or presenting at respiratory care conferences.

(isoetharine). The theory that explains the shift from a activity to b2 specificity has been termed the keyhole theory of b sympathomimetic receptors: The larger the side-chain attachment to a catechol base, the greater the b2 specificity. If the catecholamine structural pattern is seen as a keylike shape, then the larger the "key" (side chain), the more b2 specific the drug. Epinephrine has a methyl group attached to the terminal amine group and activates a and b receptors equally. Isoproterenol adds an additional methyl group with strong b stimulation and little a stimulation. Isoetharine further increases the bulk of the amine side chain and adds an ethyl group, modifying the structure of isoproterenol and producing b2-preferential activity. Currently, only isoetharine is available as a nebulizer solution. Isoproterenol is available as an injection.

Catecholamines are unsuitable for oral administration because they are inactivated in the gut and liver by conjugation with sulfate or glucuronide at the carbon-4 site. Because of this action, they have no effect when taken by mouth, limiting their route of administration to inhalation or injection. Catecholamines are also readily inactivated to inert adrenochromes by heat, light, or air. For this reason, racemic epinephrine, isoetharine, and isoproterenol are stored in amber-colored bottles. Nebulizer rainout (i.e., nebulized particles that condense and fall, under the influence of gravity) in the tubing may appear pinkish after treatment, and a patient's sputum may even appear pink-tinged after using aerosols of catecholamines.

Because the limited duration of action with catecholamines is hardly suitable for maintenance therapy of bronchospastic airways, drug researchers sought to modify the catechol nucleus, which is so vulnerable to inactivation. As a result, the hydroxyl attachment at the carbon-4 site was shifted to the carbon-5 position, producing a resorcinol nucleus. This change resulted in metaproterenol (named for the 3,5-attachments in the meta position) and terbutaline (for the tertiary butyl group). Because neither drug is acted on by COMT, both have a significantly longer duration of action of 4 to 6 hours compared with the short-acting catecholamine bronchodilators. Because of its bulky side chain, terbutaline is b2-preferential, thus possessing minimal cardiac (b1) effects. Both drugs can be taken orally because they resist inactivation by enzymes in the gastrointestinal tract and liver. For these reasons, the newer generation of resorcinols and other catecholamine derivatives was much better suited for maintenance therapy than the older catecholamine agents. Metaproterenol and terbutaline are slower to reach a peak effect (30 to 60 minutes) than epinephrine, isoproterenol, or isoetharine. Of these two agents only metaproterenol is available for inhalation, as a nebulizer solution or MDI. Terbutaline is available as a tablet to be taken by mouth or parenterally.

The trend in adrenergic bronchodilators has been toward development from nonspecific, short-acting agents, such as epinephrine, to b2-specific agents with action lasting up to 6 hours, such as albuterol and levalbuterol. A major limitation of b-adrenergic bronchodilators developed after isoproterenol and isoetharine was their 4- to 6-hour duration of action, which limited their usefulness in controlling nocturnal asthma symptoms and necessitated a less convenient, four-times-daily dosing schedule. Longer acting agents offer the advantages of less frequent dosing and protection through the night for asthmatic patients.

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1. All guidelines 2002 for Endotracheal Resuscitation and Intubation, Guidelines for ET, p. 1-10

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It's unfair to paint the industry leaders as "bad guys". We educators remember that so many of the early respiratory therapy learning materials were actually developed and freely distributed by our equipment manufacturers. It's also a fact of life that most advances in patient management actually come from drug and/or equipment manufacturers. Any actions then, that might stifle that inventiveness would surely be counter-productive.

The relationships between MDs and pharmaceutical companies and the relationships between respiratory therapists and their equipment providers have traditionally been good ones. Evidently there are some in government who feel these relationships have crossed a line. Keeping continuing education on the up and up relies on voluntary commitment of all parties involved. We all want to preserve the integrity of continuing education. We want it to be objective and independent. And we want it to stay free of outside interference.

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