

Will transfusion errors due to human factors ever be eliminated?

To the Editor—The transfusion of ABO-mismatched blood usually results from patient misidentification and sample-labelling errors during phlebotomy. It is a common problem worldwide^{1,2} and causes more transfusion-related fatalities than does the transfusion-mediated transmission of human immunodeficiency virus.³ Various approaches have been used to minimise human error during phlebotomy and blood transfusions; however, none have been convincingly and uniformly effective. Some hospitals require that a second specimen of blood be drawn at a later time to confirm the ABO blood grouping; otherwise, new patients will be given group O blood only. Some house-staff may draw two specimens at the same time and send the second sample later on, thus circumventing the need to redraw blood. Other hospitals require two staff members to identify the patient before blood sampling and to countercheck the labelling of the specimen. As a consequence, these procedures increase the workload of hospital nursing staff and can be a source of resentment. The use of the Blood-Loc mechanical barrier system (Novatek Medical Inc., Connecticut, United States) has been promoted in some centres to improve transfusion safety,⁴ but its acceptance has been limited because of the cumbersome procedures involved and the availability of other systems. The computerised bedside identification system⁵ (Ident-A Blood Identification System; Hollister Inc., Illinois, United States) is a promising method, but is expensive and requires at least one portable scanner in each hospital ward, as well as a sophisticated computer system.

We have developed two innovative systems to tackle this problem in Hong Kong. This first was pioneered by Dr R Chu at the Pamela Youde Nethersole

Eastern Hospital: a portable bar-code scanner/printer is used by the house-officer to scan the identification number on a patient's wristband and on the label of a blood request form. If the two entries are identical, the portable bar-code scanner/printer will print the patient's bar-coded personal identification number on a transfusion label. The blood bank will not accept a specimen without this special transfusion label. This precaution ensures that the house-officer has properly identified the patient before drawing the blood specimen. This system, however, requires a portable scanner and printer in each hospital ward and is thus fairly expensive to implement: the estimated setup cost in a hospital with 40 to 50 wards is about HK\$800 000.

The second system, which is being used at the Prince of Wales Hospital, utilises a specially designed transfusion wristband, which has the following features: (1) once attached, the wristband cannot be removed except by cutting; (2) a transfusion label is attached to the band; (3) a unique code is printed simultaneously on each transfusion label and the corresponding wristband; and (4) when the transfusion label is detached from a wristband that is being worn by a patient, the label has a characteristic tear-mark, which distinguishes it from one that has been removed from an unworn wristband. If a blood sample is drawn from the 'wrong' patient, the wristband and its unique transfusion code number will remain with that patient. Blood units that have been crossmatched with this blood sample will also bear the same transfusion code as the original patient's wristband. When these blood units reach the intended patient, he or she will either not be wearing a transfusion wristband or be wearing one that bears a different transfusion code number. This human error can therefore be detected.

Table. A comparison of the transfusion wristband and portable scanner/printer systems

Feature	Transfusion wristband	Portable scanner/printer
Facilitates labelling of sample at the bedside with patient's particulars	Yes	Yes
Detects sampling errors and avoids fatal transfusion reactions	Yes	Yes
Setup costs	HK\$ 2 to HK\$ 3 per wristband	HK\$20 000 per hospital ward (HK\$0.5 to HK\$1 million per hospital)
Implementation	Can be set up immediately in any hospital	Budget constraints

Using the transfusion wristband system does not require any portable scanner or sophisticated computer support. The method is cheap to run (HK\$2 to HK\$3 per wristband), is user-friendly, and can be readily implemented in any hospital. A comparison of the two systems is shown in the Table.

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Chemotherapy for non-small-cell lung cancer: cost and toxicity?

To the Editor—I read with great interest the review of chemotherapy for advanced non-small-cell lung cancer by Lam et al.¹ The article was an instructive and timely review for those who are working against the most common cancer in Hong Kong. With reference to the present local scene, I would like to raise two additional points about the chemotherapy for this cancer.

Firstly, in the light of the recent health financing issues facing Hong Kong, a newer drug such as cisplatin or paclitaxel can cost up to 10 times more than an older-generation drug such as methotrexate or fluorouracil. The cost difference would be magnified by taking into account the large number of patients needing treatment for lung cancer. We have previously demonstrated that fluorouracil, vincristine, and cisplatin are equally effective against adenocarcinoma of the lung in vitro.² In our study, each drug suppressed the growth of cancer cells in 60% of cases.² While acknowledging that such in vitro assays are often disputed by oncologists, it would appear that the high prices charged by manufacturers for new drugs are not necessarily justified by the effectiveness of those drugs.

Secondly, some cytotoxic drugs may be more toxic to the Chinese population, even after adjustments for weight, height, and surface area have been made. For example, in our initial trial of nitrogen mustards for lung cancer treatment in 1961,³ three of the four patients died after receiving chemotherapy. The only

survivor had discharged herself after having received one third of the calculated dose; her survival time was more than 5 years. I fully agree with Lam et al, that gemcitabine has a mild toxicity profile, even for Chinese patients. The same may not be true, however, for some other new drugs such as topotecan or doxorubicin hydrochloride liposome (a long-acting form of doxorubicin). They can cause very severe marrow suppression in patients—more severe than is implied by the matter-of-fact warnings in the pharmaceutical literature.

In conclusion, may I once again express my appreciation of the review by Lam et al, and wish his team every success in the fight against lung cancer.

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