The utilisation of modern transport and telecommunications platforms to assist in the remote provision of paediatric cancer diagnostics in Tanzania

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Abstract

Background/Objectives: The acquisition of a pathologic diagnosis represents a critical point in the management of children with malignant disease, allowing staff to plan a therapeutic pathway. In resource poor settings, diagnoses help to identify children who will benefit from the limited interventions available and those who will not. Access to timely diagnoses can be a challenge in low and middle income countries. While enhanced local laboratory capacity is the ultimate answer, interim solutions are needed to assist programs with existing deficits. Modern transport and telecommunications technology can facilitate this process. Design/Methods: Muhimbili University, Dar es Salaam, provides a paediatric cancer program for Tanzania. As part of a formal twinning arrangement, laboratory staff in Dublin have provided interim diagnostic services while helping to develop local paediatric cancer diagnostic capacity in Tanzania. Samples are transported free via DHL® couriers. Preliminary reports are communicated to local clinical staff via WhatsApp with final reports scanned and e-mailed. Results: Since 2008, almost 1000 cancer samples have been transported from Dar to Dublin. Transport time is two working days. In 92% of cases, a preliminary communication regarding specimen adequacy and provisional diagnosis was communicated via WhatsApp the day after receipt. In 95%, final diagnosis was proffered in 48 hours or less with average time to final report just 2.9 days. Marrow samples delivered in cellular antigen stabilising reagent (Transfix®) showed some loss of cytoplasmic antigens but sufficiently preserved membrane antigens to permit interpretation. Flow cytometric methods for leukaemia diagnosis are now established in Dar with technical and interpretative support continuing via remote access to local analysers from Ireland. Immunohistochemistry is being developed in Dar. Conclusion: Rapid remote access to cancer diagnoses in resource poor settings is feasible using modern transport and communications platforms, providing a viable alternative while local capacity is under development.

Drug Terms
endogenous compound, membrane antigen

Disease Terms
leukemia, twin pregnancy

Device Terms
analyzer

Other Terms
bone marrow, cancer diagnosis, cancer epidemiology, controlled study, diagnosis, doctor patient relation, gene loss, human, human cell, human tissue, immunohistochemistry, Ireland, major clinical study, preventive health service, Tanzania, telecommunication, university

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