In Nepal there is very little functioning govern-
mental healthcare at the hospital level for a
population of around 29 million people. Most
hospitals are private initiatives and patients
have to pay cash for their treatment. The
remote Ampipal Hospital in Gorkha district
(fig. 1) is run by a local committee of villagers
with the support of non-governmental organi-
sations, like Nepalmed Germany. Nepalmed is
a Germany-based group of volunteers from all
over the world supporting Nepalese activities in
the field of healthcare. The report on the World
Spirometry Day 2012 event in the Nepalese
capital Kathmandu in the September issue of
Breathe [1] inspired me to write about my
training sessions in Nepal. In Germany, I
worked as a respiratory physician in private
practice for 5 years, after a 10-year period spent
working in teaching hospitals. In my spare time,
I am chairman of Nepalmed and for 4 years
have organised medical surveys in Ampipal,
Nepal to learn more about the medical needs of
the local population. This helps with planning
of medication and equipment supplies. It also
helps provide specialised physicians to teach
the hospital personnel efficient diagnostic
and therapeutic procedures.

Spirometry training in
Germany
There has been no dedicated spirometry
curriculum in Germany for doctors or nurses.
A small group of German respiratory physi-
cians, called The Doctor’s Group for Diagnostic
Lung Function, has promoted a standardised
approach to teaching. This comprised a half-day
session in two parts: a lecture on basic
principles, followed by practical training using
spirometers provided by the respiratory physi-
cian as well as the general practitioner’s own
spirometers. The event ended with case discus-
sions and a written test, which is discussed
after completion with all participants. After 1–
2 years, an advanced course or a refresher
course can be taken.

I perform between four and five spirome-
try training sessions per year for general
practitioners and nurses, following the
German group programme. Therefore, I was
excited to read about the proposed ERS
Spirometry Driving Licence programme and
to attend the first train-the-trainer course at
the Vienna congress in September, 2012. This
course programme combined a standardised
approach to teaching lung function across
Europe with high-quality knowledge. It also
builds a European spirit amongst respiratory
physicians and nurses. For decades in
Germany, in contrast to many other countries
in Europe and across the Atlantic, body
plethysmography has been established as a
common diagnostic method among respira-
tory physicians, in hospitals as well as in
general practice. However, many small hos-
itals and general practitioners opt for
spirometry, which is easier and cheaper. For
the future, there is a great need for better
quality training. I took part in the ERS course
to improve my teaching skills and learned a lot
about teaching, especially about the impor-
tance of reviewing and reinforcing knowledge.

Statement of Interest
None declared.
Spirometry training in Nepal

My last journey to Nepal was scheduled for October, 2012 when the ERS Spirometry Driving Licence materials were not yet available. I organised these trips for members and friends of NepalMed who would like to travel with the support of someone experienced in this area. Our supporters can see the projects themselves and meet the partners, seeing for themselves where their donations go. Often new concepts and objects of support emerge during the tour and the participants develop a strong bond towards voluntary charity work.

During past surveys in Nepal we also included spirometry, because there are a great number of people with shortness of breath and coughing, due to infections and the smouldering of open fireplaces in the small cottages. Not very surprisingly, we found a high prevalence of chronic bronchitis and obstructive ventilatory disorders, averaging 32% in males and 24% in females presenting to the hospital during autumn and winter months. The results were presented at the ERS congresses in Vienna 2009 [2] and Barcelona 2010 [3].

For my visit in October 2012, I ordered a number of lung function textbooks for our Nepalese partner hospitals from the British Association for Respiratory Technology and Physiology (ARTP) because the proposed course system for the ERS Spirometry Driving Licence resembles their programmes. In the week before Christmas 2012, I received information from the ERS course co-ordinators about the curriculum, the application procedures and papers that should be used in teaching Spirometry under this approach.

In Nepal, there are very few spirometers available or in use. At the Tribhuvan University Teaching Hospital, Maharajgunj, Kathmandu, there is one spirometer. The doctors have used this to conduct small respiratory surveys. Hardly any other hospitals perform lung function diagnosis. Raising awareness of respiratory medicine among professionals is badly needed, as is equipment.

For our first survey in Amppipal Hospital in 2008, I taught a German student in my own practice spirometry for 1 week during normal working hours. We sent him to Nepal with the EasyOne device (NDD Medical Technologies, Inc., Andover, MA, USA). This is a robust system and gives the opportunity to collect and process data on a notebook computer. We also provided many spare mouthpieces, disinfection solution and laminated instruction sheets, in English, about the procedures and basic interpretation of results. The student performed well and instructed the local nurses. He measured nearly 600 patients identifying a high number of patients with airway obstruction. In 14% of all spirometries we found an obstruction: in 15% of females (42 out of 337) and 22% of males (41 out of 190).

One immediate result of the finding of high number of subjects with airway obstructions was to send a young man from the village to learn how to construct smoke-free ovens, from locally available materials at an affordable cost.
price. Since then, he has built more than 400 ovens in the area. Instructional videos about smoking cessation have also been shown on a television set in the waiting area of the outpatient department.

In preparation for the journey in October, we enquired into the need for further spirometry training amongst the partner hospitals in Amppipal, Kirtipur and the Model Hospital Kathmandu and they were all interested. Nepalmed bought three identical spirometers from Microlab (CareFusion Health, Hoechberg, Germany) and I planned the teaching sessions. My practice nurses accompanied me and assisted with teaching lung function, as well as taking the opportunity to visit Nepal and its World Heritage sites. They were overwhelmed by the colourful culture with its multitude of temples and shrines, in sharp contrast to the overpopulation, noise and pollution in the Kathmandu metropolitan area.

After 2 days, we left for the remote village Amppipal in the mid-western hill region. It is a full day’s journey along deep gorges with wild rivers and lush green forests. Amppipal Hospital is situated on the western slope of Mount Liglig at an altitude of 1020 m, amidst green terraced fields of rice, mustard and millet. Since the monsoon season was already over we had wonderful dry, warm and sunny weather with spectacular views of the snow-capped peaks of the Himalayas.

We knew that there is only one young Nepalese doctor in Amppipal. He and the six nurses were eager to learn about lung function testing. Some of the nurses had already received training in spirometry from our German student during the airway survey. Amppipal Hospital is a charity hospital supported by an American non-profit organisation.

We started teaching with lectures on anatomy and pathophysiology, indications, definition of spirometric values, equipment, technique and interpretation. Afterwards my nurses practiced with each of the Nepalese nurses using the device. By the end, all of the participants felt confident to perform spirometry independently in the future. We provided them with the ARTP Spirometry textbook, a short concise booklet about spirometry with case discussions and fact sheets for patients.

In Kathmandu, we organised a bigger group of participants due to our very full schedule. We had a lot of appointments with the embassy, medical suppliers, supporters and friends. Six doctors and eight nurses from both Model Hospital Kathmandu and Kirtipur hospital attended the meeting. I started again with the lectures for the entire group. In the second part, the nurses trained on the spirometer with the three nurses from my practice. Meanwhile, the doctors discussed curve interpretation and problem cases. For some of the nurses from the Model Hospital it was a refresher course, because a year ago Nepalmed introduced spirometry in order to conduct a survey of allergic respiratory diseases. The data collection finished in December 2012, after inclusion of more than 200 patients.
From the ERS Education Department:

We were interested to read the inspiring article by Dr Drews, and congratulate him on his work in Nepal, bringing spirometry training to the country. Dr. Drews illustrates the challenges in delivering spirometry training at a local level.

As the ERS European Spirometry Driving Licence is coming to fruition, we have had proposals to disseminate the ERS Spirometry training programme to many countries, including Denmark, Italy, Georgia, New Zealand and Australia, each with their own set of unique difficulties to address.

Dr. Drews correctly highlights the efforts that would be required to overcome challenges such as differences in cultural working practices, intermittent electricity and internet, and a lack of experienced spirometry trainers to disseminate the programme. From applications received, other issues have been brought to our attention including the prescribed mandatory requirement within the programme structure that all course directors must attend the European based spirometry train-the-trainer programme and the issue of how we can maintain the quality of ERS spirometry training programmes delivered in the other side of the world.

The ERS spirometry task force and working group led by Brendan Cooper (UK), and Irene Steenbruggen (The Netherlands) are keen to assist local trainers to deliver the prescribed programme, and are confident that with the simple educational structure and flexible model designed by this task force, their aim to standardise training and certification in spirometry will be accomplished.

We look forward to working with Dr Drews and other trainers in addressing these issues and meeting the challenges in bringing standardised spirometry training, through the European Spirometry Driving License, to many countries.

Training in the future

With the new ERS Spirometry Driving Licence training manual now at hand, we are planning a session in Kathmandu for refreshing training, as well as a complete, but probably abbreviated new course. The core modules, including the practical training, have to be shortened to fit into a one day event. This is necessary because the Nepalese working week permits only one day off, on Saturday. Sunday is the start of the week. The most challenging points will be the implementation of the intercontinental filling-in and submission of the Spirometry Workbook from participants in Nepal to Germany. Another near-impossible task is the online completion of module 1 (anatomy) due to very slow internet connections and very frequent power cuts.

Respiratory medicine in Nepal has not reached the importance it should have, either in the educational curricula or in everyday clinical practice, considering the high prevalence of airway disorders. From our experience with the events in Nepal and the feedback from the participants we know that there is considerable interest and need for further training opportunities in lung function for the doctors and nurses in this country. It has to be discussed whether it would be suitable to sail under the ERS Spirometry Driving License flag or establish something similarly meaningful for Nepal.

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3. Drews A, John G, Bergmann T, et al. Adults in rural Nepal: are obstructive ventilatory disorders frequent? Eur Respir J 2010; 36: Suppl. 54, 521s.

Prove the ERS Education Department:

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