



# SpeechMagic

The strongest link - Bringing legacy systems up to speed

Great Ormond Street   
Hospital for Children  
NHS Trust



Great Ormond Street Hospital for Children NHS Trust (GOSH) in London are using the Soliton powered by SpeechMagic™ reporting workflow solution to bridge the gap between their Radiology Information and Picture Archiving and Communications systems (RIS

and PACS). Based on unique accession numbers, RIS data and PACS images are accurately linked, thus avoiding confusion and ensuring accurate reporting. With speech recognition on top, productivity for plain film x-ray reporting skyrocketed by more than 40%.

GOSH were early PACS adopters, at a time when system interoperability was future thinking they added an iSoft RIS to their SIEMENS PACS. However, communication between the two was non-existent – with the result that there was always a risk that paper requests, images or reports would be mixed up between patients. In addition, new NHS targets required speeding up the radiology workflow in order that radiology reports were ready to be included in discharge summaries and thus meet turnaround times.

GOSH identified three measurements to support productivity and accuracy:

- 1) Bring in speech recognition to reduce turnaround times
- 2) Create a work list for easier organization and team communication
- 3) Establish a RIS/PACS interface to ensure consistency between report patient and image

## Reporting preferences

“I freely talk; I’ve got in my head what I want to say. I know what the message is. I know what the conclusion is. I say the whole lot, put the microphone down and then I’ll have a look and see if it’s got it right. If there are any corrections, I’ll do it immediately – often with the microphone again. Or if it is a very complex word that I think the system may not have encountered before I’ll type it up first time to correct it.

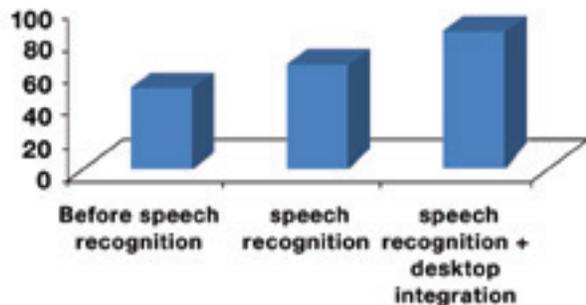
The recognized text is the final report, because the Soliton/ SpeechMagic system is so accurate. More than half of the reports need no correction at all, it’s got it word-perfect. I’ll press authorize and the report is gone – totally finished. I never have to revisit it again.”

Melanie Hiorns, Consultant Radiologist and Chair of Radiology.

*“Speech recognition can pay for itself in just over a year of salary of a transcriptionist. If you have more secretaries than this, you are very quickly in a positive financial situation. You can pay a secretary to do it or a system to do it. It doesn’t take long for the financial numbers to take off.”*

**Melanie Hiorns, Consultant Radiologist  
and Chair of Radiology, GOSH**

“The desktop integration ties image, report and scanned paper request form together. As radiologists transfer from one patient to the next within the RIS, the same transfer now automatically takes place on the PACS,” explains John Campbell, Programme Manager. “The real-time speech recognition and the work list on the other hand were the productivity components.”



### Step-by-step

With each measurement, productivity increased. In plain film radiography, for example, before speech recognition, 40% of the reports were available within 24 hours. The addition of speech recognition raised this number to 65% - “almost instantly”, according to Melanie Hiorns, Consultant Radiologist and Chair of Radiology. Two months later, the implementation of the work list brought another 20%. Today, 85% of plain film radiography reports are available within 24 hours.

Melanie Hiorns looked at speech recognition from both a management and a doctor’s perspective – well aware of the

criticism front-end speech recognition is facing in terms of transferring secretarial work to radiologists. “Nothing is more correct than not having your highest paid employees doing the administration work,” she says. And with speech recognition, this is the case. The Soliton powered by SpeechMagic™ solution often transcribes dictations more accurately than secretaries, which means less back and forth between radiologists and secretaries and less idle time between the dictation, transcription, validation and final authorisation of a report. This reduced the admin component for radiologists – with the added benefit that it leaves the service less vulnerable when secretaries are on holiday, ill, or change jobs.

### Skilled resources

GOSH is a highly specialized and recognized pediatric hospital. They take care of very complex conditions from all over the world: 95% of their findings are ‘abnormal’, less than 50% of their patients are from within London boundaries. This poses additional challenges on transcription management, as reports have to be efficiently distributed across the world.

“Once you have an established secretary, once they know the vocabulary, they are very skilled and very desirable. But we are a specialist hospital. Most of our diseases are very complex and they are often quite rare. It takes a long time for us to get a transcriptionist to the level of skill necessary for the typing that we require. But once they are at that level, it is fantastic – they know people’s styles, the types of string words and vocabulary that they use and their nuances”, said Melanie Hiorns.

*“Speech recognition in healthcare has a bright future ahead of it, as voice can replace keyboard in a number of solutions. I could imagine our entire hospital portal to be voice-activated and operated. Replacing the keyboard means better infection control. A physician comes to a terminal, gets bio-metric access to the system and uses voice to navigate applications and dictate reports – this could soon be a reality.”*



**John Campbell, Programme Manager  
Care Records Services, GOSH**

However, secretaries at this level of knowledge and experience can, should and want to take on more challenging tasks in administration and patient care. “It is a dull job for secretaries to type our dictations,” says Melanie Hiorns. GOSH therefore had a high turn-over of secretaries, which delayed transcription. In addition, secretarial resources spent on typing dictation summed up to a considerable cost factor over the years. “We looked into speech recognition for two reasons: one for liability and one for cost-saving”, added Melanie Hiorns.

### **NHS targets**

Availability of discharge summaries as of

- March 08 within 72h
- March 09 within 48h
- March 10 within 24h after patient discharge.

### **A safer solution**

“The Soliton powered by SpeechMagic™ system was able to link our iSoft RIS into the SIEMENS PACS from a reporting point of view. The system uses the RIS database and examinations as a driver to push information to the PACS - in order to open investigations it deems necessary for reporting.

When an investigation is booked into the RIS, it is assigned a unique accession number. That number is carried through into the modality. The examination is undertaken. The images are sent to the PACS - including the accession number associated with them.

When the clinicians in the wider Trust look at the images on the PACS system, they can also access the corresponding report from the RIS. The accession number in the RIS has to be the same as in the PACS for the report and the images to be matched up. One of the big risks from not having an integrated system is the possibility of having mis-matched accession numbers between the PACS and the RIS systems. Having the Soliton powered by SpeechMagic product between the two ensures that when



you open a patient in the RIS, it opens the same patient in PACS – there is no risk of reporting the wrong information on the wrong patient and producing the wrong reports for the wrong investigation.”

**Simon Hadley, PACS/RIS  
Administrator for GOSH**

The GOSH system is believed to deliver more accurate transcriptions than the secretaries could do. Combined with the streamlined reporting, Melanie Hiorns declares she does less administration work with respect to reporting - plus she expects the increased accuracy to improve patient safety.

“We are seeing an improvement in quality, a reduction in turnaround time and an increase in patient safety as a consequence of the desktop integration,” says Melanie.

“While the transition to speech recognition can be tough at the beginning, the rewards are enormous.”

**For product information please visit**

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