

## **Radiology Apps: Brief review of the best currently available apps**

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## Learning objectives

The purpose of this poster presentation is to briefly review some of the best Radiology Apps available in various platforms

## Background

With greater availability of faster WiFi/ Wireless internet connections at work, at home, at commercial enterprises, on transport all of us can stay connected as well as transfer large volume of data.

Apps{ applications} available smartphones, tablets, portable laptops as well as desktop computers is making it access information. Cloud storage and computing is making it easier to access information between devices from anywhere in the world.

Everyone and every company appear to have an app these days, including Radiology related.

Apps can let your phone or tablet do almost anything within the technical limitations of the mobile device.

Apps is an abbreviation for application. An app is a piece of software. It can run on the Internet, on a computer, or on the phone or tablets

A large number of apps are available for various operating systems, i.e. IOS {Apple}, Android {Google Play/Store}; other operating systems {Windows/Blackberry} have fewer apps compared to others. Now apps availability is not limited to smartphones and tablets, they are also available on laptops, desktops

Apps have several advantages over the normal desktop software programs: They install in seconds, they are always up-to-date{ as they are hosted on the web}, Apps do not crash computers or the devices they are installed on; by syncing multiple devices, the apps are available across several devices { smartphone, tablets, computers}

Radiologists and related professions, because of the digital and visual nature of Radiology, are quickly adopting mobile apps .

# Findings and procedure details

## VIEWING SOFTWARE APPS

The resolution of smartphones/tablets are getting better and are being constantly upgraded, and resolution are now suitable to view Radiological images, share images and give initial opinions [OsitiX HD; Mobile MIM}

## EDUCATIONAL/TEACHING APPS

A large number of currently available apps are educational -targeting not just trainee radiology students but also other medical professionals {Radiopaedia, Radiology Assistant, Radiographics}

## REFERENCE APPS

Reference apps are available covering a wide range of topics including differential diagnosis, calculator tools, radiographic positioning, MRI protocols, CT protocols, referring guidelines for referring physicians { Radiology Toolbox}

## PATIENT EDUCATION APPS

Companies, hospitals and Radiology Departments have realised the importance of using patient education, particularly with the increasing number of patients owning a smartphone/smart device, patients who are surfing the net for information. Patient awareness has increased over the year. Apps are now available for patient education regarding radiation dose, details of procedure, apps to entertain children undergoing scans

## **RADIOPAEDIA**

{radiopaedia.org}

Based on the wiki platform, uploaded and edit by users, monitored by a dedicated team. This is designed for all health professionals with an emphasis on radiologists and radiology students. A large number of cases are available and can be viewed offline. It is free to download. Packs of cases can be downloaded covering a variety of topics, each pack contains 10-30 cases. Image quality is good, topics can be browsed alphabetically.

Works as an excellent reference app, also available on Facebook and other social media { Fig.14}

### **OsitiX HD**

Multi award winning DICOM image viewer { only on iOS}, allows downloading and manipulating series of images . It is designed to work seamlessly with any DICOM compatible software, with interactive manipulation tools such as zoom, pan, cine, changes in window levels, Multiplanar reconstruction etc. At present it cannot be used for primary opinion, however, it is an excellent tool for preliminary viewing and second opinion {Fig 3}

### **RadSnap**

RadSnap is a free clinical tool that allows receiving quickly and easily professional consultations for difficult cases sent via mobile devices such as iPhone, iPad or Android. This tool helps especially referring physicians and radiologists in areas of the world who cannot afford expensive PACS software. RadSnap runs on iPhone, iPad and Android devices and is also available as desktop version. RadSnap is connected to Radiolopolis, the largest Radiology community on the web with over 10,000 medical professionals eager to teach and help. {Fig 7}

### **Radiology Assistant**

Supported on iOS and Android platform, it is an imaging reference with articles written by experts.{ The Educational site of the Radiological Society of the Netherlands} Images can be searched, images can zoomed and panned Frequently updated content available free on the desktop computers, however, it cost around 5 euros to download the app on the smart phones.{Fig 6}

### **Emergency Radiology**

It is a radiology quiz app, primarily aimed at doctors working in the Emergency Department, may be useful for newly starting Radiology registrars. Fee paying service , may discourage users.{Fig. 8}

### **ECR 2014/2015**

Useful app if you are attending ECR, find your way around the programmes and venues, floor plans including details arranged by speciality, details regarding eating places and tourist sites. Free to download {Fig 2}

## **RADIOLOGY**

RSNA members and subscribers have immediate unlimited access to full text articles published in the Radiology journal, non-members can access all abstracts and old full text articles. Excellent image quality, articles can be searched by content, author, modality etc. {Fig 9}

## **RADIOGRAPHICS**

Like the Radiology app, this app allows RSNA member and subscribers full access to articles published in the RadioGraphics, primarily contains peer-reviewed educational material { Fig 9}

## **FRCR RADIOLOGY PHYSICS**

Probably the only app for FRCR Physics, designed for UK based FRCR examination, targeting students appearing for the Part 1 examination. Large pool of MCQs, needs more notes and guidance to help students. It is a paid service, free or cheaper option may help students {Fig 12}

## **RADIOLOGY KEYIMAGE ARCHIVE**

KeyImage Archive by Ultimarad solutions is a easy to use radiology image capture, editor, organiser , sharing and archiving tool. One can capture images {Lightbox, PACS} using mobile phone camera, edit, add annotations and share them on blogs, social media. Available on iOS, Android & Windows version, it is intended for teaching purposes only, not for diagnostic and reporting purpose. Free {Fig 13}

## **RADIOLOGY TOOLBOX**

Claimed as radiologist's ectopic brain due the app loaded with useful tools including GFR calculator, Radioisotope half lives, solitary pulmonary nodule. Pro {Paid} and Lite {Free} versions .{ Fig 17}

Images for this section:

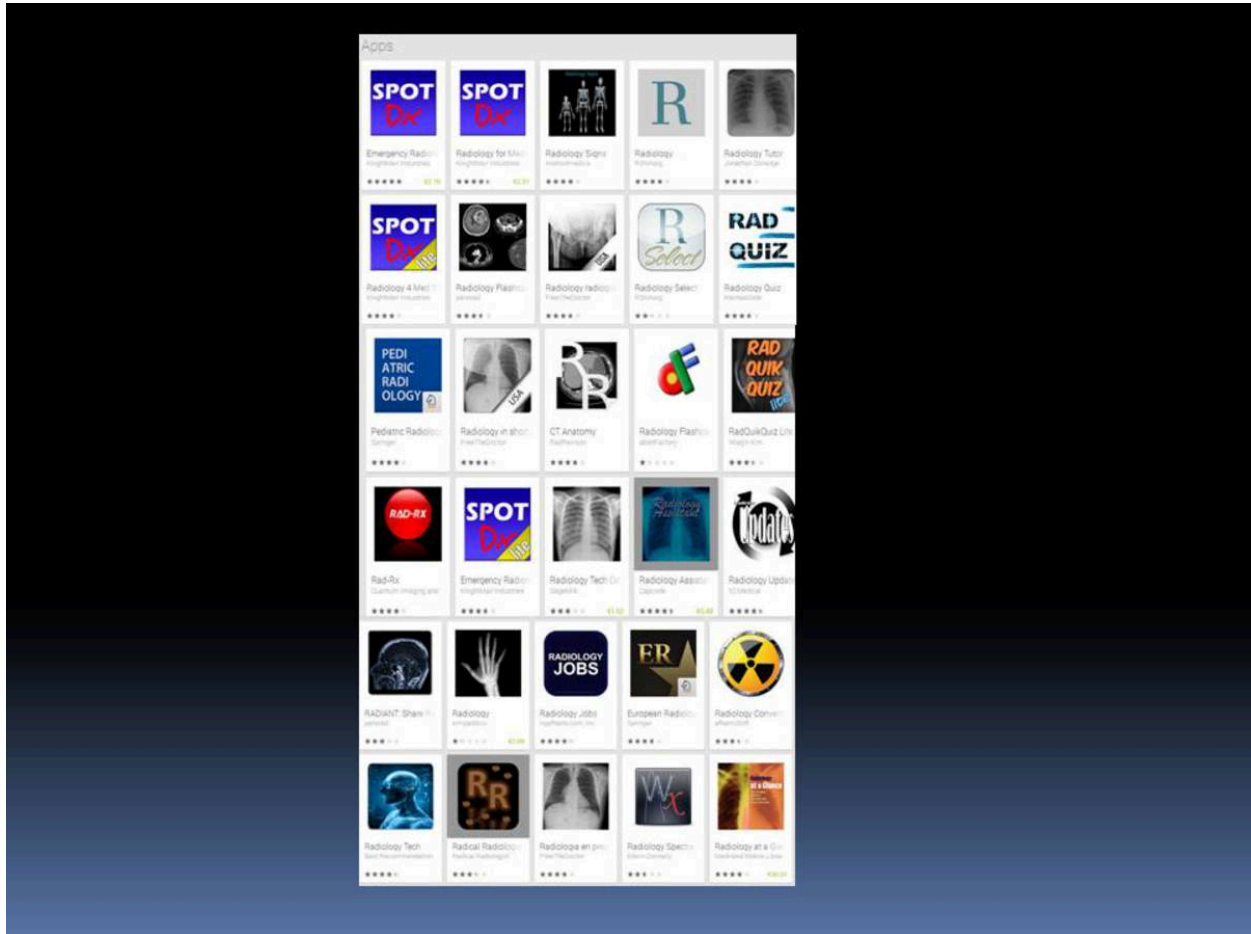
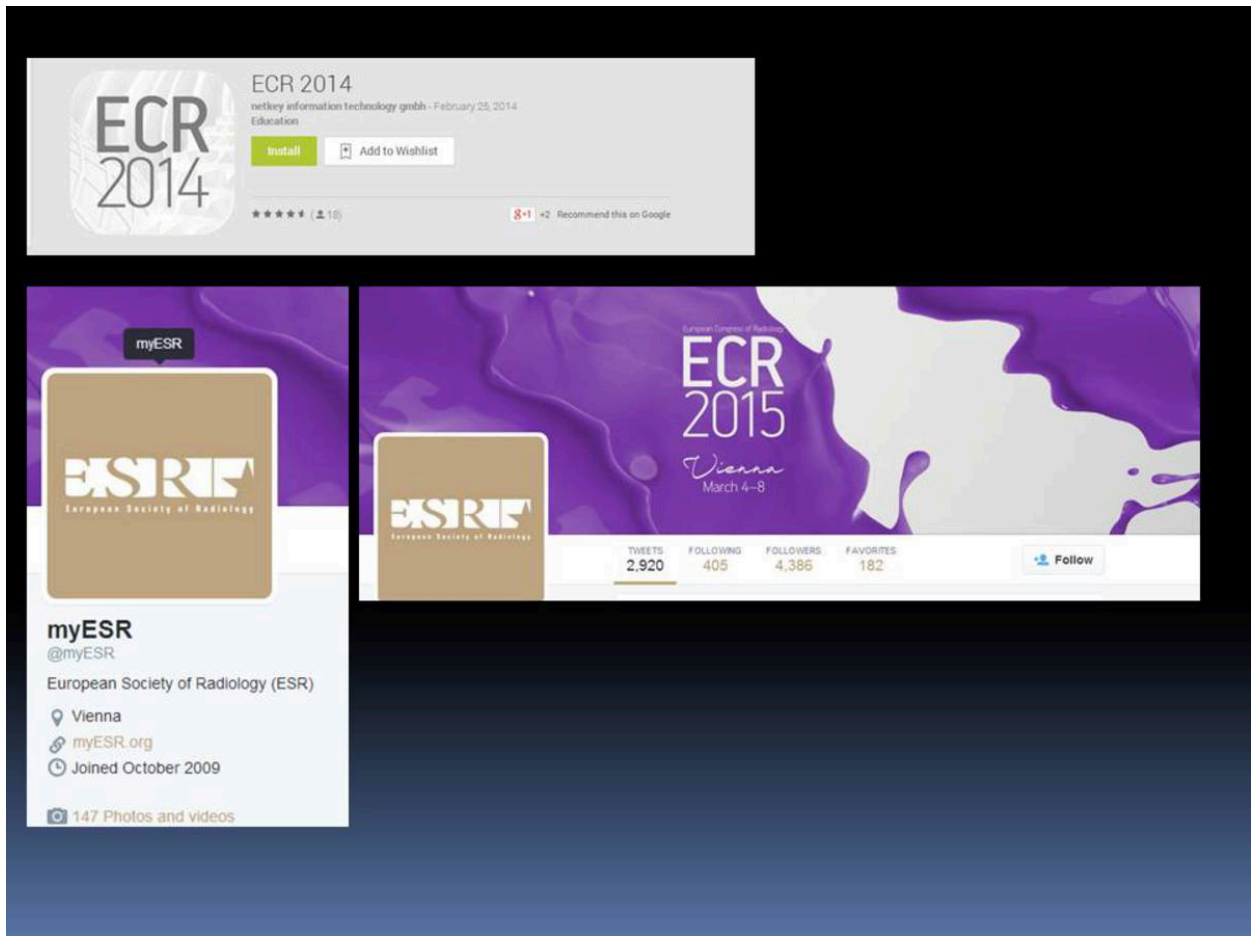


Fig. 1: Apps available on Android

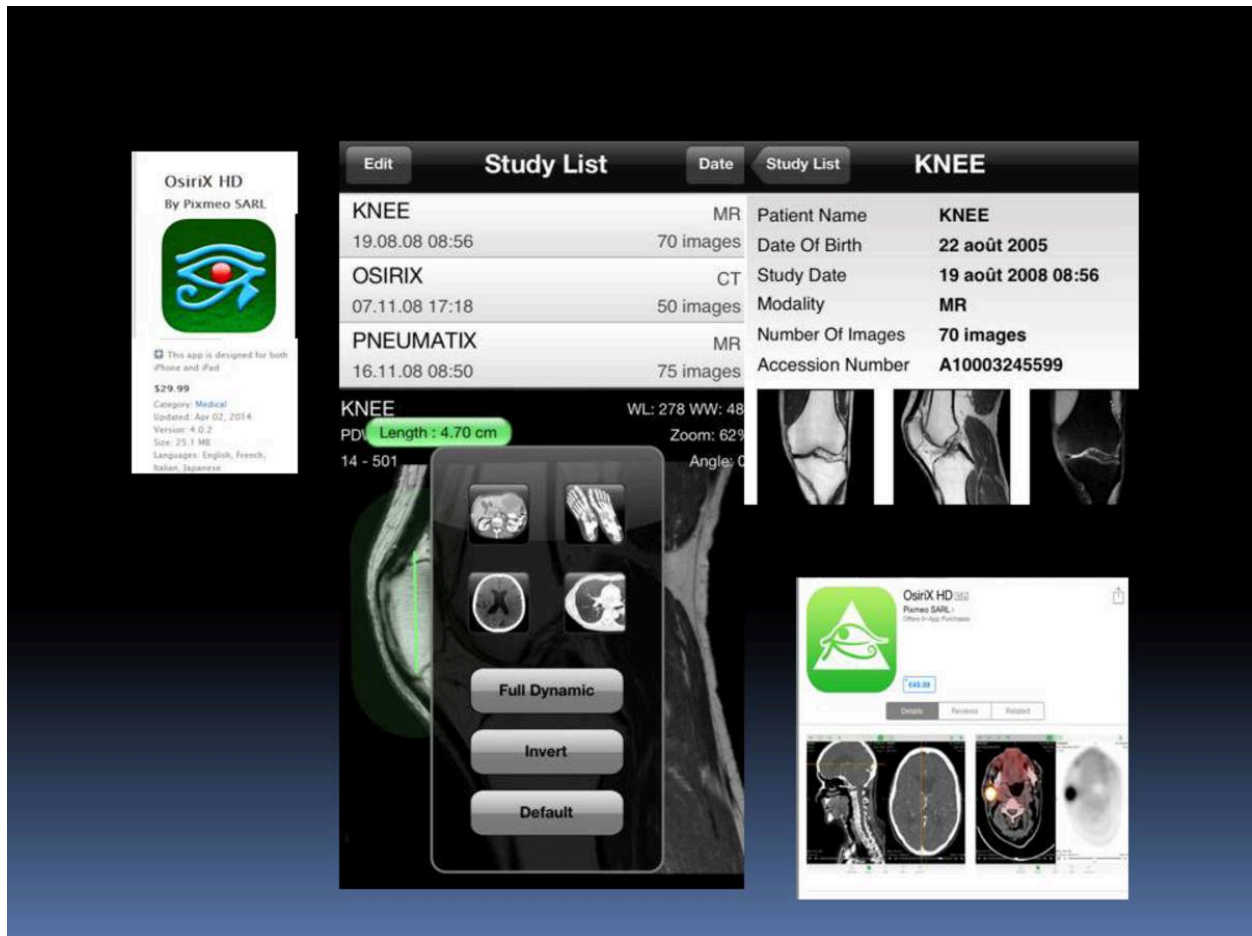
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**Fig. 2:** ECR 2014/2015 App

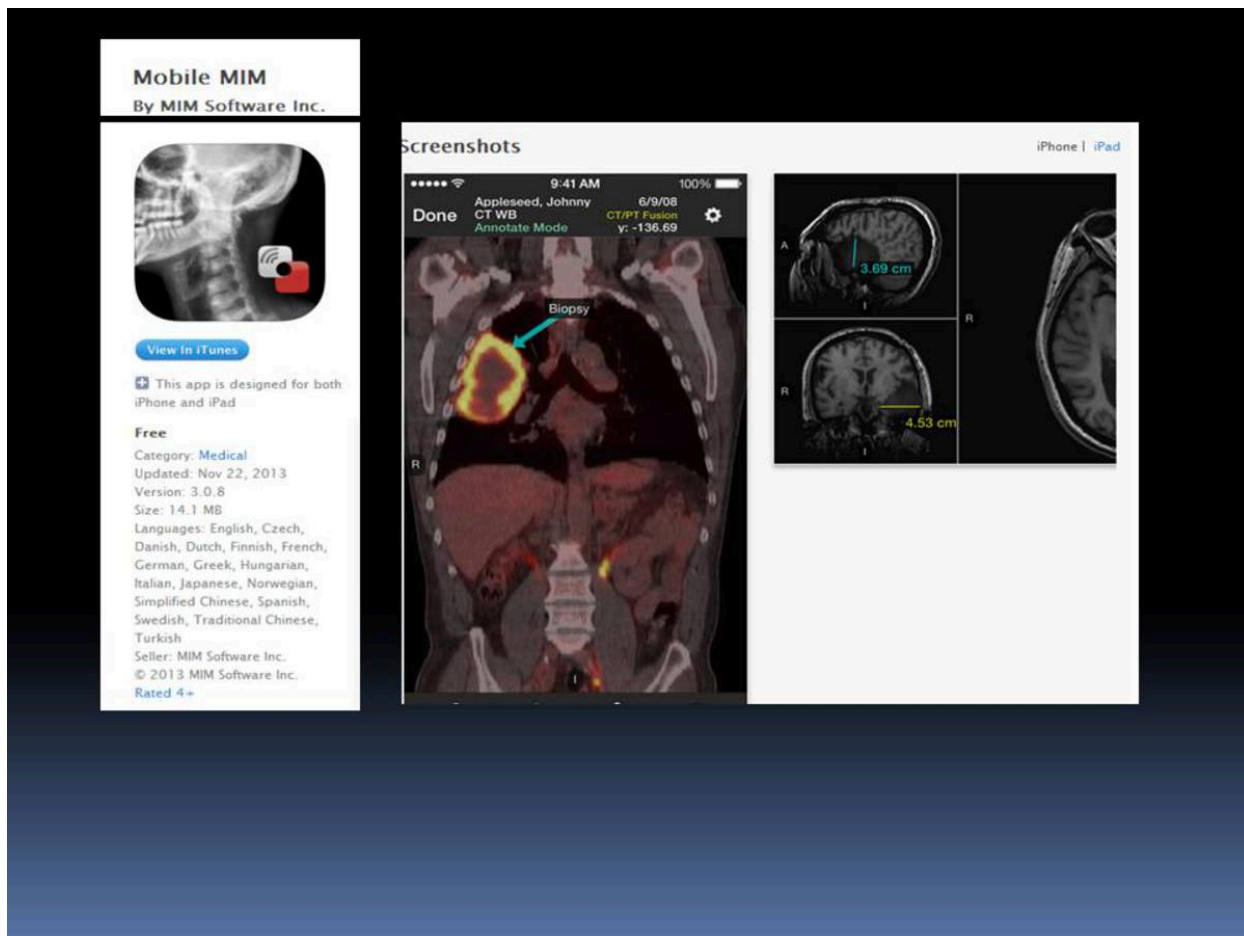
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**Fig. 3:** OsiriX HD

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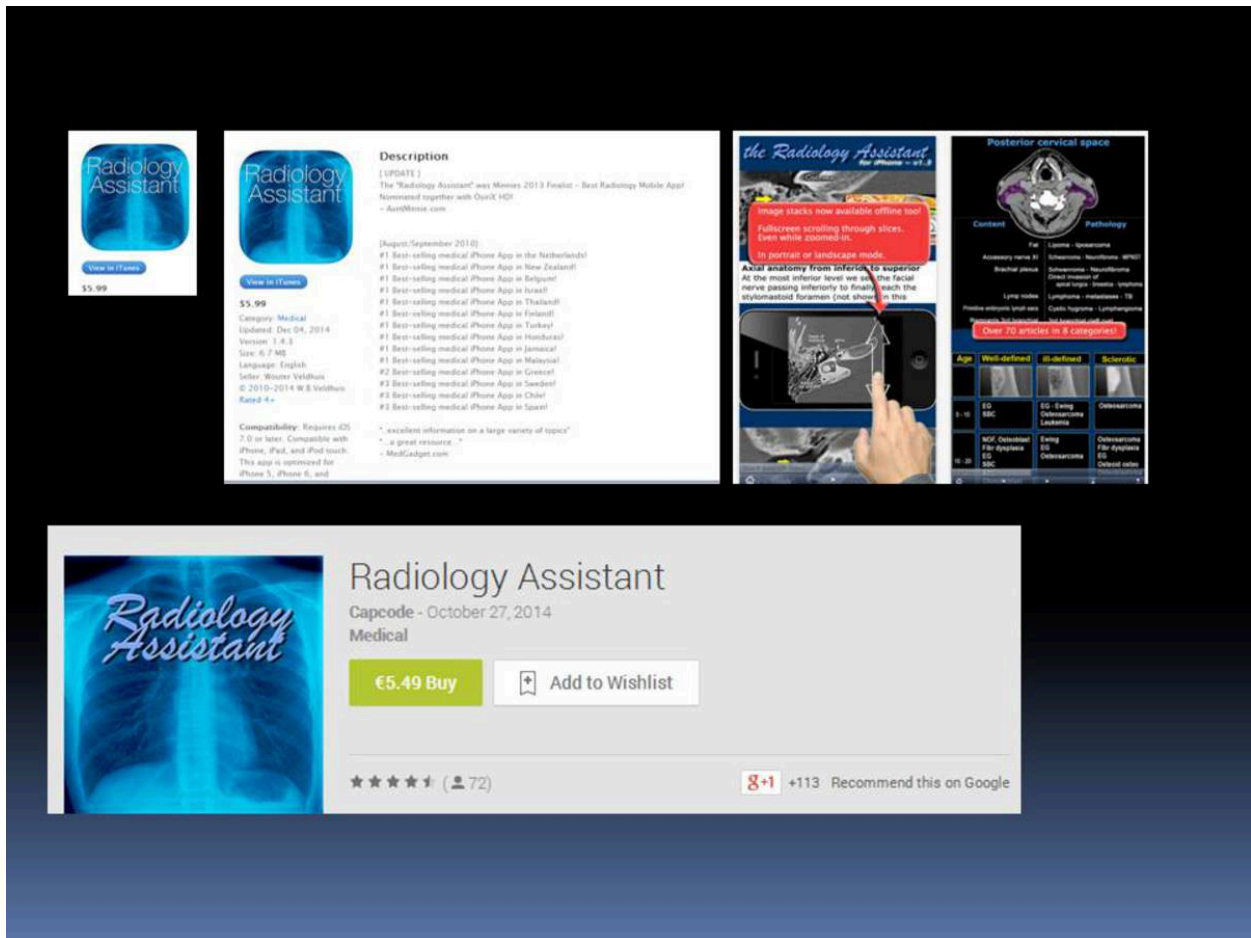
**Fig. 5:** Mobile MIM

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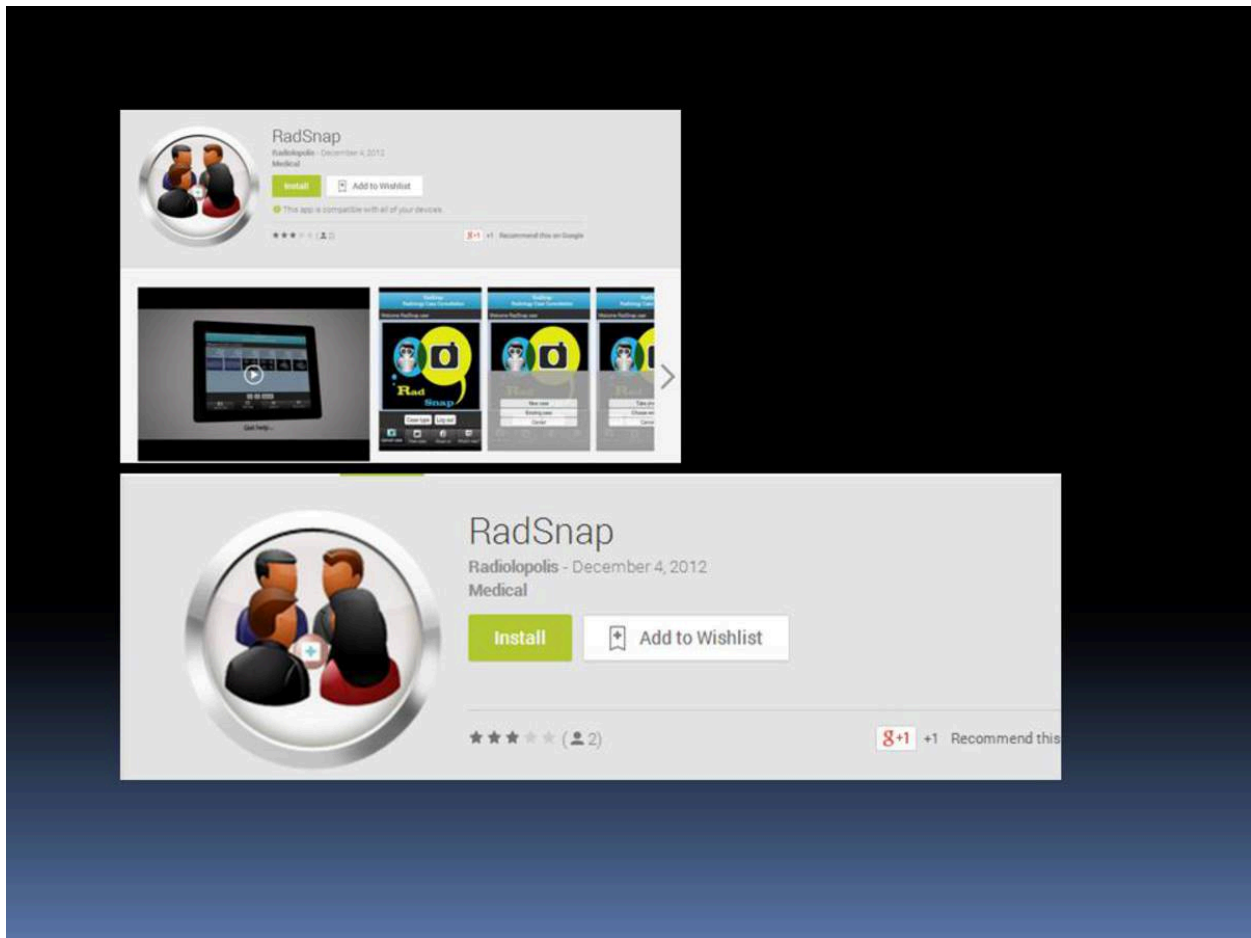
Fig. 4

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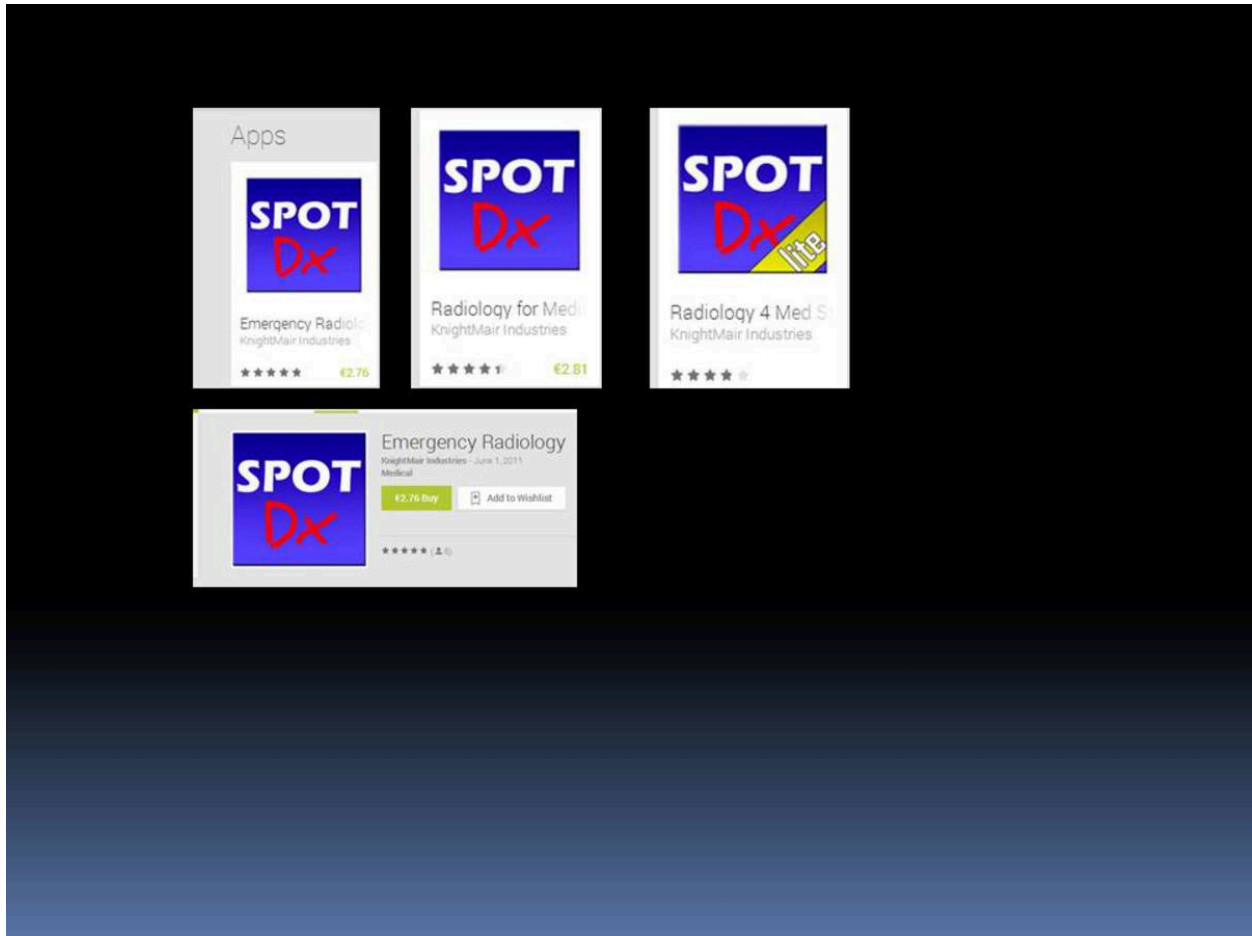
**Fig. 6:** Radiology Assitant

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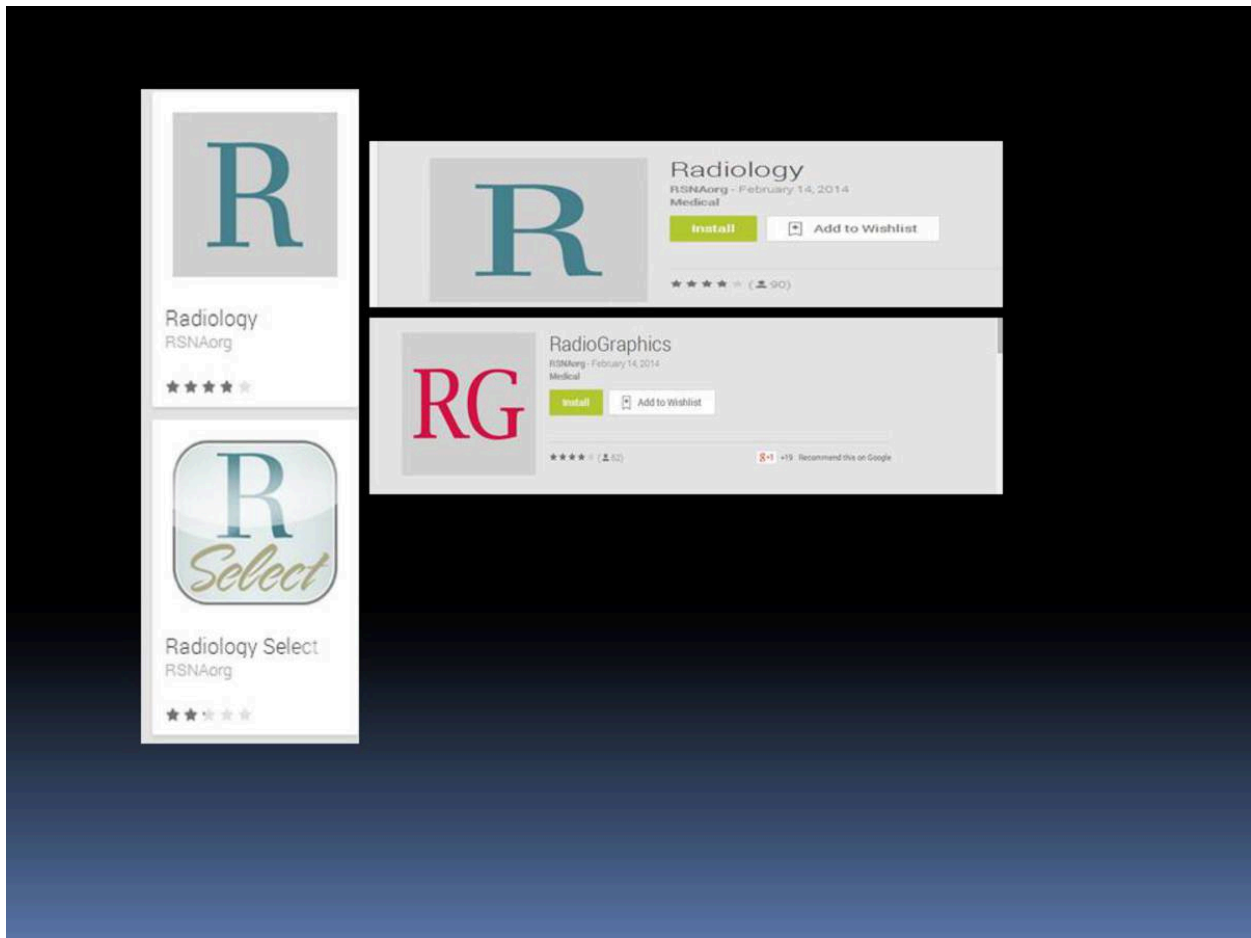
**Fig. 7:** Radsnap

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**Fig. 8**

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**Fig. 9**

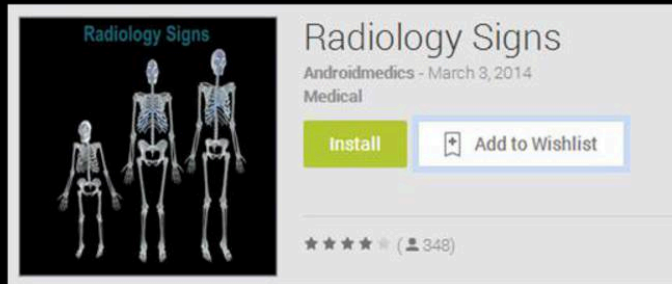
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**Fig. 10**

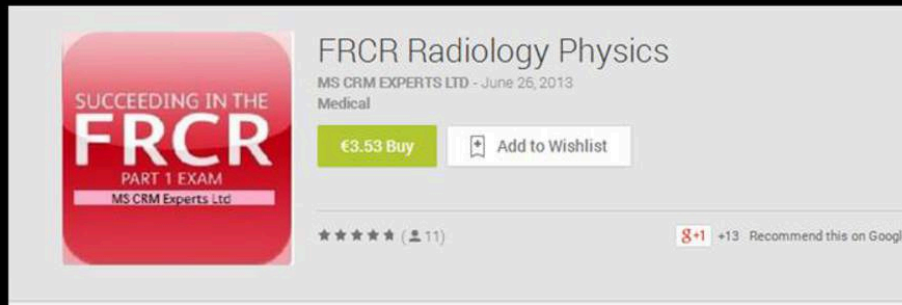
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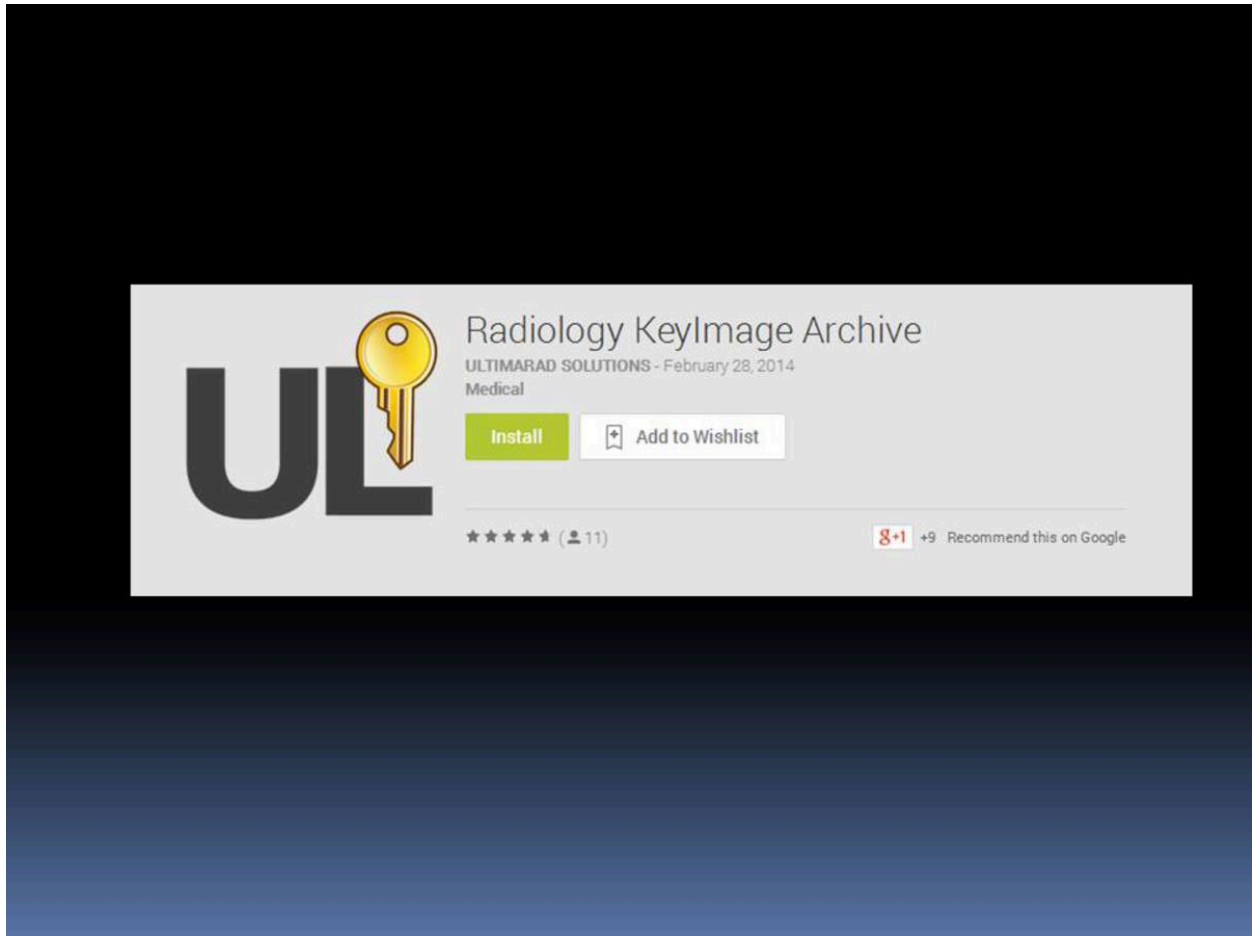
**Fig. 11**

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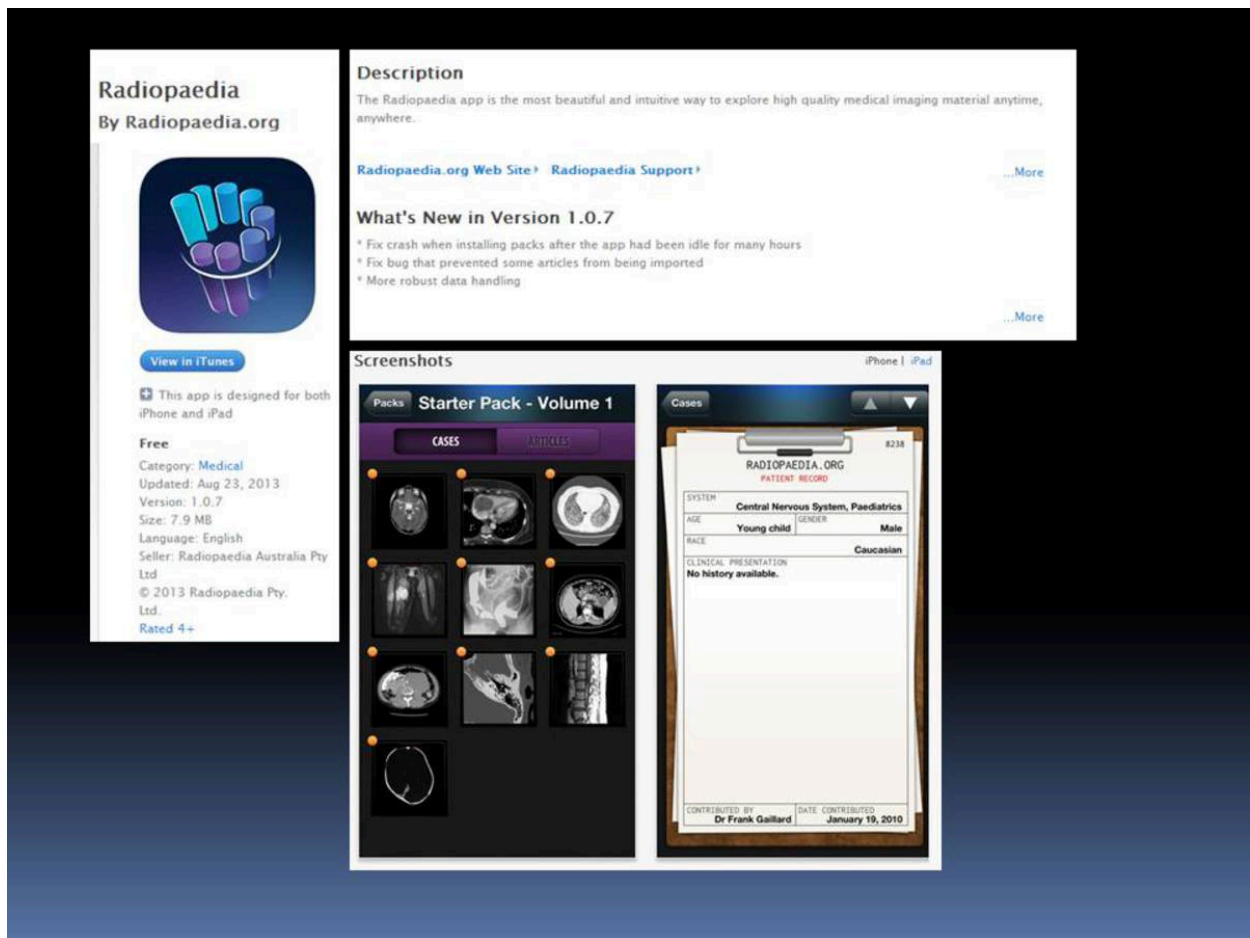
**Fig. 12**

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**Fig. 13**

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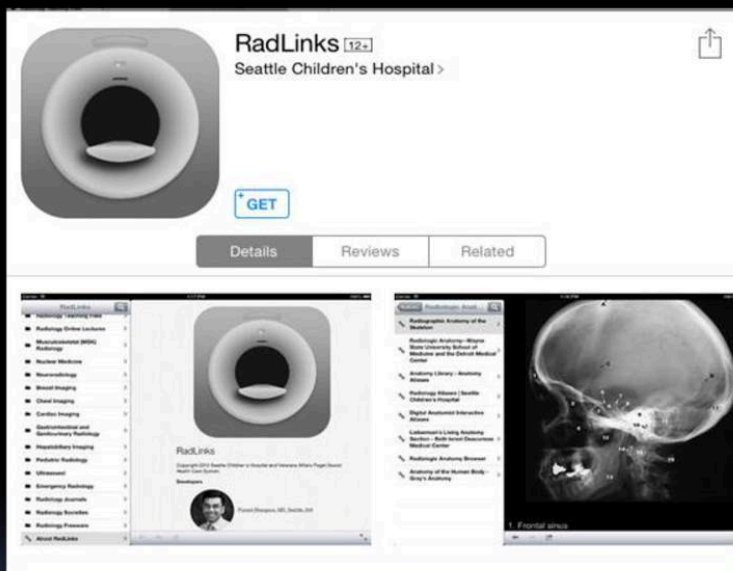
**Fig. 14:** Radiopaedia

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**Fig. 15**

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**Fig. 16**

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Fig. 17: Radiology Toolbox

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## Conclusion

A large variety of Radiology related apps are available with many potential benefits. Some are good, but many require further developments

The Apps are constantly and rapidly developing, while uploading this poster, several updates have taken place and some apps may have been withdrawn. More changes are likely leading up to the ECR meeting

Apps open up whole new possibilities in accessing information on smartphones on the go, a reference tool, quick second opinion, patient education

Apps need to be moderated, guidelines & standards should be developed by national and international societies/faculties, improve investment to increase availability and offer free apps for students.

Appropriate usage of the Apps are user responsibility.

Data protection and patient confidentiality is of outmost importance



## Personal information

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