

Radiology Now

OFFICIAL NEWSLETTER
OF THE BSR



BELGIAN SOCIETY
OF RADIOLOGY

EDITORIAL



Message from the editor



Dear Colleagues,

We are pleased to send you the second BSR Newsletter.

One of our important missions is to keep our members informed on topics that may have a significant influence on our practice.

Please feel free to send your comments and questions to info@bsr-web.be.

We hope you will again enjoy this newsletter.

Sincerely,

Geert Villeirs
President BSR

Piet Vanhoenacker
Managing Director BSR

Contrary to what we had hoped for, the society (BSR) has not reached its targets in 2018 in terms of number of active members since the merger between NUR-UNR (Nationale Unie Radiologen-Union Nationale de Radiologie) and the former scientific society KBVR-SRBR. Several reasons have been echoed, such as the expense to be a member being too high, the communication with the membership not being optimal and the scientific credibility being lower than it used to be. Even though there's a grain of truth to each of these remarks, everything has been done to revamp the face, the organization and activities of our society.

One of the major changes has been the active involvement of members in training (Young Radiologist Section, also known as YRS), which has become a major force in the endeavours of the society. The younger colleagues are the future leaders. In this issue, you will be able to sample a small smörgåsbord of their activities.

Communication is a task that is taken seriously with the launch of news flashes, the newsletter and the different websites (e.g. LMQ, Annual Meeting, BSR-WEB, YRS). Full disclosure of financial background and budget of the society can be found on the website.

The journal (JBSR) has been restyled, professionalized and renamed, by necessity, since the departure of our able Prof. Pringot. It has now left the catacombs of the approval process of Pub-Med and is fully indexed.

(see next page)



Message from the editor (part 2)

Collaboration with several European Societies has taken off (ESR, CIRSE, ESSR, and ESCR). The scientific sections and council now work in close unison with the Board of Directors. Our representation in the different agencies that govern legal matters, guidelines and reimbursement is very well established. Nevertheless, politics remain the most fragile element in the planning of a sustainable practice of our specialty. In Belgium, plans can be drastically changed and substituted with “solutions” that seem to go against all reasonable thought and are highly influenced by pressure groups and media.

The aim of our society is to support science, medicine and radiology in particular and foster the idea of “statesmanship” in which the greater good is pursued to the highest degree possible. This will be a win-win for radiologists, patients and society at large.

We would be delighted if you became part of the BSR and supported our goals. Enjoy this issue of Radiology Now!

Sincerely,
Piet Vanhoenacker



WHAT'S NEW FROM PROFESSIONAL DEFENCE

New agreement on the indexation of fees

A new agreement has been signed within the MedicoMut for 2019. Once again, the idea was to reward “intellectual acts” and not to reward, or reward to a lesser degree, the so-called “technical acts”. Therefore, the promised index adjustment was not applied in a linear fashion. For medical imaging, this comes down to the following: indexation 3,3 % only for the consultancy fees and the lump sum fees (forfait).

Expressed in numbers:

With a total turnover of 1.313 billion euros, the absolute growth is 8.336 million euro, which amounts to an indexation of 0.635 %.

If you do NOT want to change your convention status compared to last year, you do NOT have to do anything! The agreement for which you did or did not register is valid for 2018-2019.



Source: website BVAS and VBS-GBS



Letter from the BSR president

The Belgian Society of Radiology in 2018 - By Geert Villeirs



This year, the Belgian Society of Radiology has again been actively involved in a multitude of dossiers that touch the very heart of our profession.

One of the most important accomplishments is the negotiation of a second Protocol Agreement with the Belgian Government. The first Protocol Agreement in 2014 enabled the expansion of our MRI fleet with 12 units, while at the same time installing a Cadastre of Heavy Medical Equipment and an Enforcement Policy, in an attempt to clarify and consolidate the exact number of CT, MRI and PET units in Belgium. As a result, however, the 12 extra MRI-units installed in 2015 and 2016 were promptly opposed by a closedown of 17 MRI-units that were found to have no operating license, yielding an actual decline with 5 units by late 2016.



Although an immediate decrease of the total number of MRI-examinations was expected along with a prolongation of waiting lists, in reality no such thing happened. On the contrary, the waiting lists did not “explode” and a steady yearly increase of the number of MRI-examinations was consolidated in all following years, largely due to an increased production on existing MRI-units from early mornings to late evening, at nights and during weekends. At the same time, however, the annual number of CT-exams continued to increase as well. With this, it became all but clear how to finance the ambition that the BSR adopted early 2018 to ensure that “every hospital should have access to at least one MRI-unit”.

Meanwhile, the national health insurance (RIZIV/INAMI) conducted an audit on the consumption of CT and MRI in Belgium. It was discovered that the number of MRI-exams per unit varied with a factor of 4 in 2016 (between 4.000 and 16.000 exams per unit per year) and that the number of CT-exams per unit varied with a factor of 2 (between 8.000 and 19.000 exams per year). On a population level, regional differences with a factor of 2.5 were disclosed for MRI, with activities ranging between 55 and 135 MRI-exams per 1.000 inhabitants per year. Similar variabilities were found for CT (from 150 to 300 CT-exams per 1.000 inhabitants per year). These differences in both machine occupancy and local imaging practice are difficult to explain and warrant further scrutiny.



Initiatives to ensure less variability in the use and a more uniform geographical distribution of both CT and MRI, along with an effort to decrease the CT/MRI-ratio, became the basis of Protocol Agreement II.

The most important features are:

(1) streamlining imaging referrals and exams through introduction of a clinical decision support system (aligning referrals to international imaging guidelines), creation of a “national PACS” (enabling less repeat exams through availability of previous ones), and empowerment of referrers (introducing budgetary co-responsibility for unjustified referrals); (

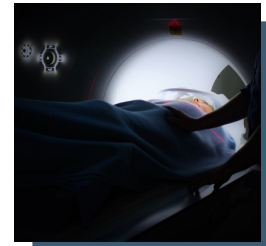
2) diminishing differences in medical imaging consumption through benchmarking of the volume of exams in departments, hospitals and/or networks and identification of unjustified “outliers”;

(3) facilitating the CT/MRI-ratio reduction through extension of the MRI-fleet with up to 18 units that will be installed in a budget neutral way and on a proposal by the Communities (Wallonia, Brussels and Flanders).

Another important focus of the BSR is the revaluation of interventional radiology. A Consensus Document has been drafted by the BSR Interventional Radiology Section, containing 4 main themes: (1) the legal definition of interventional radiology and interventional radiologists, (2) establishment of training requirements to meet this definition, (3) adoption of an equitable position towards interventional connexism and connexists, and (4) proposals to improve the reimbursement of interventional radiology procedures.

Concurrently, a BSR Consensus Document on Sonography has been drafted. Ultrasound is traditionally considered as an “easy” and “accessible” technique and two thirds of all sonographic exams performed in our country are carried out by connexists, who have the privilege of autoprescription. The BSR Consensus Document states 4 action points: (1) an appeal for minimal high-quality training in both ultrasonography physics and correct indications, (2) mandatory justification of all (autoprescribed) exams, (3) adequate reporting and archiving of all images, and (4) regular quality control of both ultrasound equipment and reporting. Both documents will be submitted to the Cabinet of the Federal Minister of Health in early 2019.

Of course, the BSR has also been involved in many other dossiers through its representation in both professional matters (e.g. Cabinet, National Health Insurance (RIZIV/INAMI), Federal Public Service, Federal Agency for Nuclear Control, BVAS/AbSym, Technical Medical Council, MedicoMut, National Council for Quality Promotion, BELMIP, ...), scientific matters (e.g. the European Society of Radiology and its subsidiaries), press relations, etc.





Although supported by over 800 members in good standing, the BSR regrets that about half of Belgian radiologists are still not a member of the Society. Through the dissemination of punctual information such as in this second edition of Radiology Now, our member website www.bsr-web.be and regular Newsletters, through direct bottom-up and top-down contacts with heads of departments in the Provincial Councils, through successful Annual Meetings, Scientific Section Meetings and the regular publication of the Journal of the Belgian Society of Radiology, as well as through institutional membership of the ESR, we hope to convince all Belgian radiologists of the importance of an active and well-supported professional and scientific society for ensuring the future and welfare of our great profession.

Sincerely,
Geert Villeirs

BSR MEETINGS



LMQ - Section on Leadership, Management and Quality in Radiology - intro by Bart Claikens

Healthcare faces dramatic changes in customer behaviour, market dynamics and regulatory demands.

On Saturday, October 6th, 2018, the Working Group of the section "Leadership, Management and Quality in Radiology (LMQ)" organized a conference dedicated to the impact of hospital networks on radiology departments. The venue of this meeting was the Deloitte Gateway Building in Zaventem. This conference focused on the changing hospital environment caused by the arrival of hospital networks.

Several renowned speakers gave state-of-the-art lectures : Marc Geboers (Zorgnet-Icuro), Marc Moens (BVAS), Filip Dewallens (Dewallens & Partners), Patrik Aerts (BSR), Martijn Grieten (BSR), Johan Hellings (CEO AZ Delta), Manfredi Ventura (CMO Ghdc prsdt AFMC) , Paul d'Otreppe (CEO Bouge psdt ABDH BVZD) and Henk Hemelaere (Deloitte). More than 50 leading radiologists experienced a well-balanced meeting providing information on network issues seen through the eyes of different stakeholders.

All members of the Belgian Society of Radiology can download the presentations from the BSR- website. The following is a summary report of this meeting.



Healthcare in hospitals: (r)evolutions ahead!

-Featured LMQ article- by Stéphanie Vanhoenacker

In the coming years, healthcare in hospitals will be forced to undergo several changes. Minister Maggie De Block has announced reforms in both hospital finance and hospital organisation which are sure to shake up hospital life as we know it.

Reform of hospital finance: towards fixed, all-inclusive reimbursements

De Block wants to make reimbursements of patient care in hospitals more uniform and transparent. Variations in reimbursements for a given medical procedure between hospitals should be eliminated. In other words, the same procedure shouldn't get a higher reimbursement in one hospital than in the other. To establish this more uniform reimbursement system, De Block wants to introduce fixed reimbursements for low-variable care. Low-variable care is the type of care which differs only slightly from one patient to another, making the price fairly easy to estimate. Examples of low-variable care include standard medical procedures such as appendectomies, placement of new hips or knees, etc. In the short term, the fixed fee will include the reimbursements of the honoraria of all the medical staff involved in the low-variable medical procedure (doctors from different specialisms, nurses, ...). This means these honoraria will no longer be reimbursed separately, but will be bundled into one payment. In the long term, De Block wants the reimbursements for low-variable care to be even more comprehensive, covering not only honoraria, but covering costs such as hospital drugs and hospital stays as well. This way, all the services provided by the hospital for the treatment of low-variable care will be reimbursed by a single, fixed, all-inclusive fee.

Reform of hospital organisation: super specialised hospitals and hospital networks

Because medical care will continue to become more complex and specialised, highly specialised care centres will be needed in the future. Consequently, De Block argues that not all hospitals will be able to continue to house all medical services. Instead, the hospital will have to choose to focus on a few medical services, and work closely together with other nearby hospitals for other services. This cooperation between hospitals in the same region will be formalized by the creation of unions, the so-called loco-regional hospital networks. As of January 2020, every hospital will be obliged to be a member of a loco-regional hospital network. A maximum of 25 networks will be created throughout Belgium.



To coordinate the cooperation within a network, every network will have its own network board (NB) and network medical council (NMC). In contrast with the hospital medical council (HMC) working together with the hospital board (HB) on a hospital level, the NMC will not have a purely advisory role, but will have real co-managing power. The consensus model is thus introduced: the NB will not be able to make independent decisions, but has to get the approval of the NMC for decisions to be finalized. This consensus model is introduced to ensure that doctors, who are heavily affected by the reorganisation in hospital networks, get a say in the management of the networks. During the first 5 years, the NMC will consist of 5 doctors from the HMC of the cooperating hospitals. After the 5 year span, elections for the NMC will be held.

The first services to be centred in hospitals are maternity care, emergency care and elderly care. After the initial phase, other medical care will be assigned to chosen hospitals. Some care will be too complex and specific to be assigned to one hospital in each network. This care will only be provided by a few hospitals in the country. The cooperation between loco-regional hospital networks and these hospitals providing this super specialised care will be coordinated by a second kind of network, the supra-regional network.



Opportunities and threats of hospital networks

The organisation of hospital into networks provides us with both opportunities and threats. An opportunity is that doctors working in specialised hospitals will deal with rare and complex pathologies daily and will therefore be highly experienced and highly skilled. Because of this, the quality of healthcare treatments will improve. Another opportunity for positive change is the increased management power that doctors will get at the network level, a management power doctors never had at the hospital level.



BSR MEETINGS

Nevertheless, many specialists worry about the impact hospital networks will have on their work and labour conditions. They fear the closing of some departments in certain hospitals will lead to job insecurity, increased workload and a longer commute to work. The merging of medical care of nearby hospitals could also lead to a number of other difficulties. One difficulty is that the size of the department staff will increase tremendously, making daily teamwork and decision-making more challenging. Take radiology, for example. If radiology departments were to merge to form 25 new departments, the merged radiology departments would consist of 70 radiologists, 210 nurses and 30 secretaries, making the department similar in size to a medium-sized company.

If management of the higher number of staff were not to result in difficulties, the coming together of different hospital cultures just might. Doctors from one hospital may focus on meaningful personal contact with patients, whereas doctors from another may place great importance on working efficiently. Another source of conflict and resistance may be the financial repercussions of merging radiology departments. The merging of higher-income departments with lower-income departments into a network will lead to a uniform income for all doctors in the network, creating clear winners and losers incomewise.

In search of change support

The reorganization of hospitals into networks will present several challenges. Clearly, guidance to make the transition run smoothly is necessary. We can for example look at how companies going through mergers deal with clashes in cultures and copy their change management tools. We can also look at how other countries, such as France and The Netherlands, have preceded us in the formation of hospital networks. Unfortunately, our change management case is a unique one, meaning we can't completely rely on these examples to guide us. That is why Zorgnet-Icuro is preparing a support platform for the formation of Belgian hospital networks. This platform will provide information and advice on all aspects of the transition (e.g. practical and juridical organisation of the networks).

The fixed reimbursements for low-variable care and the reorganisation of hospitals into networks will have a great impact on the daily workings of hospitals. Although these changes provide us with opportunities to improve healthcare quality, doctors have voiced many concerns. If these concerns will be properly dealt with will rely on the quality of medical management and its leadership. To be continued ...

Interested in knowing more about leadership, management and quality in radiology? Join us at our next LMQ meeting!



2018 BSR-YRS Annual Meeting: Feedback Questionnaire

- By Nicolas De Vos & Cedric Bohyn

On Saturday 18 November 2018, the Annual Meeting of the Belgian Society of Radiology (BSR) took place in the Brussels44Center. Afterwards, a feedback questionnaire was sent to the participating radiologists. This questionnaire showed that this year's event was once again a successful edition, providing an excellent opportunity for Belgian radiologists to both strengthen their radiological knowledge and get in touch with colleagues. However, there is always room for improvement. This article discusses the main results of the feedback questionnaire in more detail.

1. Materials and methods

The feedback questionnaire was created by the Young Radiologist Section (YRS) of the BSR. It was sent to 281 radiologists who pre-registered for the 2018 BSR Annual Meeting. 85 radiologists completed the questionnaire, accounting for a response rate of 30 %. Among the responders, there were 59 senior radiologists (69 %) and 26 radiologists in training (31 %).

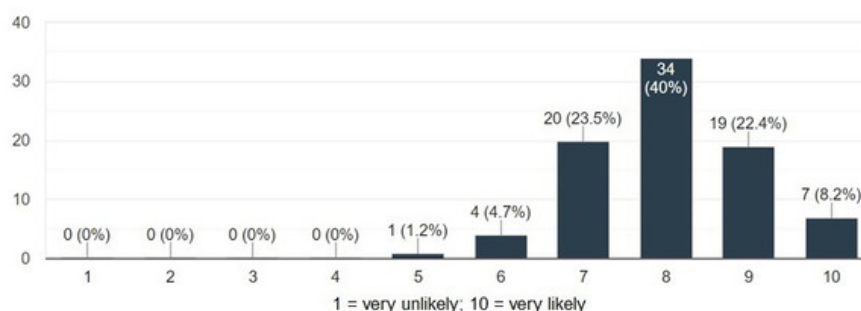
2. Results

2.1. General satisfaction

The general satisfaction was excellent, with almost 95 % of responders recommending the meeting with a likelihood of 7 out of 10 or more. This shows that the fundamental concepts of the BSR Annual Meeting are highly appreciated. The main goals for attending the meeting were obtaining radiological knowledge (85 %), networking (55 %) and obtaining accreditation points (44 %).

Considering your total experience at the 2018 BSR Annual Meeting, how likely would you be to recommend this event to a friend or colleague?

85 responses





2.2. Congress topics

This year's topics were head & neck radiology and interventional radiology in the morning and artificial intelligence in the afternoon. In the morning, head & neck radiology and interventional radiology took place in alternating parallel sessions organised by the BSR and YRS. The sessions on head & neck radiology were the most attended ones: during the first morning session (between 9 and 10:30 a.m.), 81 % of responders attended the YRS session on head & neck radiology, while during the second morning session (between 11 a.m. and 12:30 p.m.), 51 % of responders attended the BSR session on head & neck radiology. The highly anticipated afternoon session on artificial intelligence was attended by 57 % of responders. All speakers received very good to excellent ratings. A comment that was often made was that this year's topics were rather specialized, and that it may be better to combine a specialized topic with a more general topic, e.g. abdominal, pulmonary or musculoskeletal radiology. Another remark was that, due to the organisation of parallel sessions, it was not possible to attend all sessions.

BSR program	YRS program	14:00-16:00 AFTERNOON SESSION
08:30-09:00 Registration	08:30-09:00 Registration	12:30-14:00 Lunch
09:00-10:30 Interventional Radiology	09:00-10:30 Head & Neck Radiology 'From Head To Shoulder'	14:00-14:15 Message from BSR president Geert Villeirs, UZ Ghent, BE
Moderators: Tom De Beule, AZ St-Lucas, Ghent, BE Fabrice Deprez, CHU Dinant Godinne, BE	Moderators: Barbara Geeroms, UZ KUL, Leuven Anne-Sophie Vanhoenacker, UZ KUL	14:15-14:30 Actual and future employment for radiologists in Belgium: A global perspective Barbara Geeroms & Matthias Lavens UZ KUL, Leuven, BE
State of the art of imaging guidance in IR Hicham Kobeiter, Créteil/Paris, FR Interventional Radiologists in 2018: training, abilities and critical place in the department of radiology Otto Van Delden, Amsterdam, NL Must-know IR indications and techniques Mark C. Burgmans, Leiden, NL	Temporal bone CT Marc Lemmerling, Ghent, BE Thyroid ultrasound Kunwar Bhatia, London, GB Emergency imaging in head & neck Pathology Yannick De Brucker, Brussels, BE	14:30 - 16:00 Artificial Intelligence
10:30-11:00 Coffee break	10:30-11:00 Coffee break	Moderators: Mathieu Deltomme, UZ KUL, Leuven, BE Cedric Bohyn, UZ KUL, Leuven, BE
11:00-12:30 Head & Neck Radiology	11:00-12:30 Interventional Radiology 'Let's get interventional'	A.I. in radiology: hype or hope? Erik Ranschaert, vice-president EuSoMII Artificial or Human Intelligence, who's to blame? Christophe Lemmens, Nils Broeckx Advocatenkantoor Dewallens & Partners, BE Real life Artificial Intelligence Applications Bram Van Ginneken, Radboud univ. medisch centrum Nijmegen, NL
Moderators: Yannick De Brucker, AZ VUB, Brussels Jacques Widelec, HIS-IZZ Brussels	Moderators: Astrid Van Hoyweghen, UZA, Antwerp Pierre-Antoine Poncelet, UCL, Brussels	16:00-20:00 Ultra-sound party
MRI in Ménière's disease Anja Bernaerts, Antwerp, BE Imaging of salivary masses Kunwar Bhatia, London, GB Imaging of perineural tumor spread Robert Hermans, Leuven, BE	Tips and Tricks: biopsies and drainages Romaric Loffroy, Dijon, FR When do I call the Interventional Radiologist? Role of the IR in the management of hemorrhages. Otto Van Delden, Amsterdam, NL Future of IR: Emerging techniques Marco Midulla, Dijon, FR	

Meeting venue
Brussels 44 Center (Passage 44) - Kruidtuinlaan 44 - Bld du Jardin Botanique - Brussel 1000 Bruxelles - <http://www.b44c.com>
Parking 1 : Passage 44 - Ommegangstraat 16 - Rue de l'Ommegang 16 / Parking 2 : Kruidtuin-Botanique - Kruidtuinlaan 29 - Bld du Jardin Botanique 29 - Brussel 1000 Bruxelles



2.3. Congress venue and catering

Both the congress venue and catering were considered good to very good by about 60 % of responders. Some responders found the location in the centre of Brussels to be less convenient and parking rather expensive. Others commented that the reception/lunch room was small and sometimes a bit noisy. Concerning the catering, a frequently heard comment was that the only bar was situated in a corner of the reception/lunch room, with lots of people standing in front of it, while the other side of the room was nearly empty. Some responders also indicated to have preferred a hot meal and more coffee (a radiologist can never have too much coffee).

2.4. Ultra-Sound party (closing event with drinks, food and DJ)

Although most responders like the idea of a more informal closing event (72 % of responders), only a part of the responders (20 %) actually attended the Ultra-Sound party which was held between 4 and 8 p.m. This somewhat lower turnout could be explained by the fact that the party took place at the end of an already long congress day and that many of us also have familial and recreational commitments during the weekend. Nevertheless, this first edition was a good experiment and potential future editions will be further adjusted according to the feedback we received.

3. Conclusion

To summarize, the feedback questionnaire on the 2018 BSR Annual Meeting provided a lot of useful insights for the BSR and YRS. The general satisfaction was excellent, which proves that the meeting certainly deserves its prominent place on the Belgian congress calendar. However, there is always room for improvement, e.g. the topics shouldn't be too specialized, and the congress venue and catering could be further improved. The BSR and YRS would like to thank all responders for filling in the questionnaire and will definitely consider the comments made to make next year's edition even more successful. Please already mark your agendas for the next BSR Annual meeting which will take place on Saturday 16 November 2019. See you next year!



YRS Fall Meeting

- By Cedric Bohyn & Anne-Sophie Vanhoenacker

The fall meeting of the Young Radiologist Section (YRS) took place in our usual meeting room of the radiology department of the University Hospital of St Luc (St Lambrechts Woluwe).

Guest speaker

As in previous meetings, we invited an interesting speaker to open our meeting. Given the fact that AI is a big theme during the coming BSR Annual Meeting, we invited Dirk Smeets (PhD) of Icometrix, who is an expert in this field. He gave an excellent presentation on deep learning explaining to us the principles, history, applications and future outlooks. At the end, we got acquainted with their existing and already used applications for detecting and quantifying multiple sclerosis lesions, neurodegenerative disease and traumatic brain injuries.

Meeting topics

After all our questions were answered, our meeting could really begin. Besides the YRS-board, a lot of new faces from the different Belgian universities were present. Main topics on the agenda were the Annual Meeting, the past LMQ-meeting (*), the upcoming International Day of Radiology and how the YRS can play a role in shaping the future of our profession. Improving the relations with our counterparts from The Netherlands and France is an evolving project with already established collaboration for the JFR (Journées Francophones de Radiologie).

We also discussed how to make radiologists more publicly visible and explored multiple options on how to do so. Next, we debated on another important topic, being ultrasound investigations performed by non-radiologist, and tried to determine our stance..



Last but not least, a brand new workgroup with five contributing members focusing on artificial intelligence was brought to life. They will contact companies that offer AI-tools, attend AI-meetings and report about the possibilities in medical imaging

Next meeting

The next meeting will take place during late winter. In the meantime, the different workgroups will continue their assignments. We will keep you posted!

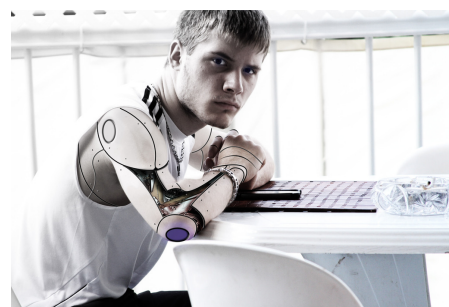
Coping with the hype of artificial intelligence

- By Xavier Hoste

Artificial Intelligence (AI) is hot, trendy and omnipresent. But... as radiologists, should we embrace this new technique or should we avoid it as much as possible?

Roots of AI

Artificial Intelligence has been around for decades. The term was first coined by John McCarthy in 1956 at the Dartmouth Conferences; he defined it as "the science and engineering of making intelligent machines". A more modern definition is "the study and design of intelligent systems that are able to perform tasks just as well or better than humans". Consequently, even the 19th-century calculator (or better yet the Arithmometer) can be considered artificial intelligence, tracing the roots of AI back to at least 1820.



Machine learning and deep learning

Within the field of AI, there are multiple subdisciplines: machine learning is one of them. Machine learning consists of a set of algorithms that can learn autonomously after being fed data of the task(s) it should perform. Several types of machine learning exist. One of the important types of machine learning for medical applications is called "deep learning". Deep learning is an advanced form of machine learning that uses neural networks, mimicking the connections of the human brain.

A growing market

As mentioned above, healthcare technology is hot and booming. Forbes cited that healthcare startups had already raised more than 15 billion in the US before the end of July of this year, 70% more than in the same period in 2017. The total worldwide revenue for machine learning software is expected to reach 2 billion in 2022 with an total available market value estimated at 16 billion (1).

This results in an increasing amount of usable applications every year. During the 2018 RSNA conference, for example, already 80 companies have showcased their machine learning solutions.

What can machine learning do?

The use and integration of machine learning in radiology can be very broad. Probably the early development and integration of machine learning in radiology will be on operational tasks, which promise early and measurable returns on investment.

Examples of AI in radiology, of which some are already available or and some are still under development, are programs that:

- automatically prioritize images, load lab information or extra software, etc.
- automatically structure and translate radiology reports (with user-specific reports for the internist, surgeon, patient...).
- automatically recognize sequences and organize them on the screen according to a user's preference.
- check radiology reports to make sure all findings have been reported.
- make automated follow-up recommendations, act upon and warn doctors and/or patients.
- automate some of the more time-consuming tasks like annotations.
- optimize image acquisition.

Eventually, programs will arise that aid the radiologists in diagnostics such as programs that:

- run on the background having radiologists' backs by checking every image for signs of disease and alerting the radiologist if signs might have been overlooked.
- prioritize hanging protocols by recognition of acute pathology (decreasing the report turnaround time).
- make specific reports of more routine investigations that only need the validation of a radiologist afterwards.

Author's choice



As for now, most programs just give you a solution to a small set of problems. To overcome this issue, different companies are working to form "platforms". These act as a kind of 'app store' thru which you can access programs of different companies which can be integrated within your clinical workflow. EnvoyAI is one of them, currently giving you access to 22 programs. It has been selected as Best New Radiology Vendor of 2018 by Auntminnie's.



This is one of the first programs combining optimization of workflow with diagnostic machine learning. Basically, the program runs in the background and detects acute pathology as they enter the worklist. The program doesn't only mark the pathology but also prioritizes the worklist empowering radiologists to detect urgent cases faster and reducing overall report turnaround time.



Zebra also uses machine learning for diagnostic use. With Zebra, not only the program itself is interesting, but also the idealism of the firm. Instead of making high-cost programs, their goal is to make AI programs affordable by only billing 1 dollar per case needed.

Limits to AI

In other words, these programs could be spectacular at what they do. But to cope with and damp the overenthusiasm and unrealistic goals, which greatly influence the radiologists' acceptance, it is important to realize two things.

First, these programs will be able to perform only narrow and specific tasks, at a human or superhuman level, but they are not able to evaluate an entire examination and create a report.

Secondly, there are still a lot of challenges to conquer such as the need for verified data to build programs on, FDA approval and multi-institutional validation, good legacy systems, the proof of saving money and/or time, the reimbursing of these software, the integration into workflows of different hospitals, and many more.

Because of these challenges, up to today, only a few hospitals outside of teaching institutions are using AI in clinical practice. The easiest option for other hospitals would be to buy AI from vendors who offer multiple integrated AI solutions.

So the question remains: should I, as a radiologist, embrace machine learning?

```
1 # Machine learning in Radiology
2
3 answer = ''
4
5 while answer != 'Y':
6     print('Should I, as an Radiologist, embrace machine learning?(Y/N)')
7     answer = input()
```

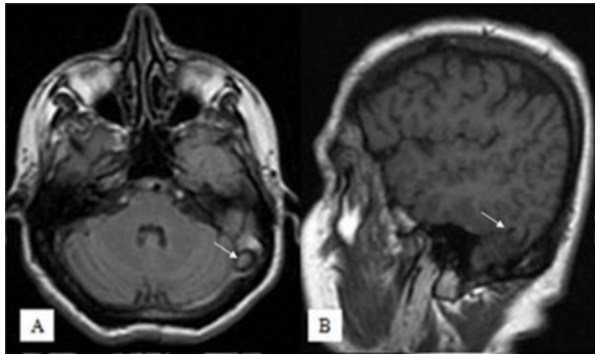
As the radiologic landscape is changing drastically (increasing volumes of information and patients, lower reimbursements, shortage of radiologists in many countries...), artificial intelligence could be there to help radiologists handle these challenges. Not by replacing the radiologists, but by assisting them and maintaining their quality of work.

(1) James Wang, A. (2016). Deep Learning Based Diagnostics: Unlocking a \$16 Billion Market. [online] ARK Investment Management. Available at: <https://ark-invest.com/research/deep-learning-based-diagnostics>

Case Quiz - By Anne-Sophie Vanhoenacker & Nicolas De Vos

A 50-year-old female presented with a headache for a long time.

Axial and sagittal Fluid Attenuated Inversion Recovery (FLAIR) images:



Question 1 (images A & B): Where is the salient finding located?

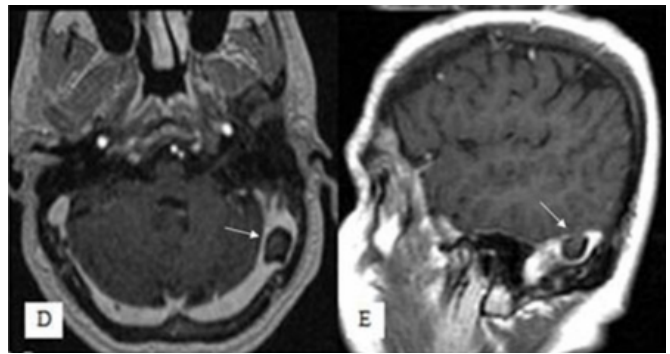
- A) Left cerebellopontine angle
- B) Left transverse sinus
- C) Straight sinus

Question 2 (images D&E): It is isointense to brain parenchyma on all previous sequences.

- A) True
- B) False

Submit your answers by clicking here!

Axial and sagittal contrast-enhanced T1-weighted images:



Question 3 (images D&E): What is your diagnosis?

- A) Sagittal venous sinus thrombosis
- B) Brain parenchyma herniation
- C) Arachnoid granulation
- D) Malignant mass

Question 4 (images D&E): This can present clinically as ...

- A) Headache
- B) Syncope
- C) Dizziness and imbalance
- D) All of the above



WHAT IS THE YRS?

The "Young Radiologist Section" or simply YRS is part of the Belgian Society of Radiology (BSR), founded by and for residents in training and recently certified radiologists. The YRS aims to connect the BSR and young radiologists in Belgium. Education, organization of the annual scientific symposium, and networking beyond borders are our three core objectives.

Interested? Come and join us at the next meeting! Please contact one of the YRS-board members for information about the time and place of the next meeting and for future correspondence. Contact information can be found by clicking on one of the links below.

Website BSR-YRS: https://www.bsr-web.be/young_radiologist_section.php

Website Young Radiologist Section: <http://youngradiologists.be/Team/>



Belgisch Staatsblad 25 oktober 2018
(Koninklijk Besluit van 3 oktober 2018)

- 460132/143 N30: bidimensionele echografie met geschreven protocol en iconische drager die ontstaat na digitale beeldverwerking van de gegevens ongeacht het aantal echogrammen – van één of beide borsten, met inbegrip van de axilla

- 469394/405 N30: bidimensionele echografie met geschreven protocol en iconische drager die ontstaat na digitale beeldverwerking van de gegevens ongeacht het aantal echogrammen – van één of beide borsten, met inbegrip van de axilla

In werking met ingang van 1 december 2018

B.S. 25 oktober 2018 - Koninklijk Besluit van 3 oktober 2018

Opsplitsing CT wervelzuil N 180

CWZ 458850/861

TWZ 457855/866

LSWZ 457870/881

Volledige wervelzuil 457892/903

Geen cumul binnen 30 dagen tenzij motivering in patiëntendossier

Opsplitsing MR wervelzuil N 180

CWZ 459491/502

TWZ 457914/925

LSWZ 457936/940

Volledige wervelzuil 457951/962

Geen cumul binnen 30 dagen tenzij motivering in patiëntendossier

In werking vanaf 1 december 2018

Moniteur belge 25 octobre 2018 (arrêté royal du 3 octobre 2018)

- 460132/143 N30 : échographie bidimensionnelle avec protocole écrit et support iconique produit après traitement numérique des données quel que soit le nombre d'échographies - d'un ou des deux seins, y compris l'axillaire.

- 469394/405 N30 : échographie bidimensionnelle avec protocole écrit et support iconique produit après traitement numérique des données, quel que soit le nombre d'échographies - d'un ou des deux seins, y compris l'axillaire.

A partir du 1er décembre 2018

M. B. du 25 octobre 2018 – Arrêté Royal du 3 octobre 2018

Subdivision CT rachis N 180

Rachis Cervical (RC) 458850/861

Rachis Thoracique (RT) 457855/866

Rachis LumboSacré (RLS) 457870/881

Rachis entier 457892/903

Pas de cumul dans une période de 30 jours sauf motivation dans le dossier du patient

Subdivision IRM rachis N 180

RC 459491/502

RT 457914/925

RLS 457936/940

Rachis entier 457951/962

Pas de cumul dans une période de 30 jours sauf motivation dans le dossier du patient

En vigueur à partir du 1er décembre 2018



NEW NOMENCLATURE

Bijkomende informatie waarom er een splitsing is gebeurd:

Een splitsing van de nomenclatuur in cervicale, thoracale en lumbale wervelzuil is nodig om een juiste opvolging te kunnen doen van het gebruik van RX, CT en NMR bij lumbale wervelzuil pathologie.

Tot vandaag was het niet mogelijk om uit te maken of een MR van de rug betrekking had op de cervicale, thoracale of lumbale wervelzuil.

Het nieuwe nomenclatuurnummer "MR full spine" of "NMR-onderzoek van de volledige wervelzuil of een combinatie van twee van de NMR-onderzoeken van de cervicale, de thoracale of de lumbosacrale wervelzuil, minstens drie sequenties, met of zonder contrast, met registratie op optische of elektromagnetische drager " moet worden gebruikt voor het opsporen van ruggenmergpathologie, bv bij multiple sclerose.

B.S. van 22 oktober 2018 – Koninklijk Besluit van 23 september 2018

CT voor dentale toepassingen:
459690/701 N 117 CT zonder contrast van het faciaal massief mag niet meer worden gebruikt voor dentale toepassingen.
Nieuwe verstrekking: 458953/964: CT zonder contrast van de bovenkaak en/of onderkaak

Informations complémentaires sur les raisons de la subdivision de la nomenclature:

Subdiviser la nomenclature en catégories « rachis cervical, thoracique ou lombaire » est nécessaire pour un suivi correct de l'utilisation des RX, CT et IRM en cas de pathologie du rachis lombaire. Jusqu'à présent, il n'était pas possible de déterminer si un IRM du dos était en rapport avec le rachis cervical, thoracique ou lombaire.

Le nouveau numéro de nomenclature « MR full spine » ou « Examen IRM du rachis entier ou combinaison de deux des examens IRM du rachis cervical, thoracique ou lombosacré, minimum trois séquences, avec ou sans contraste, avec enregistrement sur un support soit optique, soit électro-magnétique » doit être utilisé pour le dépistage de la pathologie de la moelle épinière en cas de sclérose multiple par exemple.

M. B. du 22 octobre 2018 – Arrêté Royal du 23 septembre 2018

CT pour applications dentaires:
459690/701 N 117 CT sans contraste du massif facial: ne peut plus être utilisé pour les applications dentaires.
Nouvelle prestation: 458953/964: CT sans contraste de la mâchoire supérieure et/ou inférieure



Toepasbaarheid van de nieuwe verstrekking:

- Bij preoperatieve planning in geval van autotransplantatie en in het kader van het plaatsen van tandimplantaten, zoals omschreven in de verstrekkingen 308512/523, 308534/545
 - Bij congenitale afwijkingen
 - Bij vermoeden en/of opvolging van dento-alveolaire traumata in het kader van de ingrepen zoals omschreven in de verstrekking 312756/760
 - Bij vermoeden van een interrelatie tussen canalis mandibularis en een wijsheidstand
 - Bij eruptieproblematiek met impacties van definitieve, surnumeraire of supplementaire elementen
 - Bij botgerelateerde kaaksgewrichtsproblematiek
- In geval van diagnostiek en/of therapeutische benadering van goedaardige kaakbottumoren en -cysten
- Bij voorbereiding van vergoedbare maxillofaciale heelkunde

De indicatie maakt deel uit van het patiëntendossier.

De verstrekking is enkel aanrekenbaar op voorschrift van de arts-specialist in de stomatologie, de specialist in de kindergeneeskunde, de specialist in de urgentiegeneeskunde, de specialist in de acute geneeskunde, de arts houder van het brevet acute geneeskunde, en de tandheelkundige houder van een bijzondere beroepstitel.

In werking vanaf 1 december 2018

Applicabilité de la nouvelle prestation:

- lors du planning préopératoire en cas d'autotransplantation et dans le cadre du placement d'implants dentaires, comme décrit dans les prestations 308512-308523, 308534-308545;
- lors d'une anomalie dentaire congénitale
- en cas de présomption et/ou de suivi de traumatismes dento-alvéolaires dans le cadre des interventions telles qu'elles sont décrites dans la prestation 312756-312760;
- en cas de présomption d'une interrelation entre le canal mandibulaire et une dent de sagesse dans le cadre d'une extraction de dent de sagesse;
- en cas de problématique d'éruption avec impactions d'éléments définitifs, surnuméraires ou supplémentaires;
- en cas de problématique d'articulation de la mâchoire liée à l'os;
- en cas de diagnostic et/ou d'approche thérapeutique de tumeurs et de kystes bénins d'os de la mâchoire;
- lors de la préparation d'une chirurgie maxillofaciale remboursable.

L'indication fait partie du dossier du patient.

La prestation est uniquement attestable sur prescription du médecin spécialiste en stomatologie, du spécialiste en pédiatrie, du spécialiste en médecine aiguë, du médecin porteur du brevet de médecine aiguë et du praticien de l'art dentaire porteur d'un titre professionnel particulier.

En vigueur à partir du 1er décembre 2018



This corner will be a forum to discuss important topics for the general radiologist. Review articles will be published in JBSR and condensed here. For this edition a couple of links and publications are presented.

Contrast use

New guidelines issued by ESUR

EUROPEAN SOCIETY OF UROGENITAL RADIOLOGY (ESUR)
ESUR GUIDELINES ON CONTRAST AGENTS, VERSION 10.0

The Contrast Media Safety Committee (CMSC) of the ESUR recently presented the 10th version of its contrast agent guidelines.

The CMSC started almost 25 years ago (1994) and updated the guidelines every 2 to 3 years. Over the years, more than 200,000 copies of the printed version have been printed and the guidelines have been translated into several languages.

Although the current contrast agents have been on the market for many years, minor changes occur in their adverse reaction pattern and new observations are reported. This justifies updates at a regular pace.

The 10th version of the Guidelines now includes updated sections on acute adverse reactions, gadolinium contrast agents and gadolinium related issues, post contrast acute kidney injury (PC-AKI) and myeloma and contrast media. In addition, the CMSC has decided to harmonize the use of the terms 'contrast agent' and 'contrast medium' and there is an introductory section on this newly accepted terminology.

The new version is freely assessable through the website (www.esur.org > ESUR Guidelines). Hopefully, the guidelines will be helpful in radiological practice and beyond, in communication with referring physicians on contrast related issues in the individual patients, and that ultimately they will benefit all our patients. Comments and questions are welcome at cmscmails@gmail.com.

Major changes in nephroprotection

- Every patient (not only high risk) has now to be screened. (eGFR value < 3 months)
- Cut off values of eGFR values are lower than previously. If lower than threshold: start-up hydration scheme and control eGFR within 48 h.
- in hospital patients, renal insufficiency and transplant patients: eGFR < 7 days.



American College of Radiology white papers and -RADS system

New

NI-RADS for Head and Neck imaging.

Reporting and data-systems

<https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems>

Incidental findings

<https://publish.smartsheet.com/42d18e874a164318a0f702481f2fbb70>

Structured reporting and style of report

The purpose of this survey was to assess the perception, preferences, and expectations of recipients of radiology reports in terms of style and content. The voice of the customer approach shows referring physicians have distinct expectations and specific but predominantly coherent preferences with regard to radiology reporting. The survey results offer valuable specific feedback and a strong argument in favor of structured reporting.

Read More: <https://www.ajronline.org/doi/abs/10.2214/AJR.18.19714>

MEMBERSHIP



Enjoy the benefits of BSR and now also ESSR and ESCR!

The BSR is in constant motion and more than ever, being a member is very attractive. As the most important radiologists' organisation in Belgium, the BSR keeps offering new advantages while actively defending the profession.

We are glad to announce that BSR launches cooperation with the European Society of Skeletal Radiology (ESSR) and The European Society of Cardiovascular Radiology (ESCR). Thanks to a joint effort of the ESSR and BSR, our members can now join these two societies at a reduced rate.

BSR membership

Benefits

- Registration discount at the 2018 annual symposium of the BSR (Interventional Radiology, Head & Neck and Artificial Intelligence)
- Free publication of articles in the free access Journal of the Belgian Society of Radiology (JBSR), meaning a saving of € 300
- Members-only pages on the website.
- Free European Society of Radiology (ESR) membership
- Reduced membership fee for ESSR (European Society of Skeletal Radiology) and CIRSE (Cardiovascular and Interventional Radiology Society of Europe). ESCR: see escr.org.
- BSR newsletters
- Free Advice
- Registration discount for IMAIOS e-anatomy and RAD-Primer

Pricing

Subscription fee per member category:

- Certified radiologists practicing in Belgium: € 400
- Retired members or radiologists practicing abroad: € 130
- Trainee radiologists: € 50
- Honorary members: no subscription fees
- Membership ESSR : Add 60 euro and/or contact (info@bsr-web.be), see below for More information. Membership ESCR: 20 euro. contact info@bsr-web.be
- Membership CIRSE: please contact info@bsr-web.be

Payment methods

- Online at <https://www.bsr-web.be/>
- Bank Transfer
 - IBAN: BE97 3631 3631 5049
 - BIC: BBRU BE BB
 - Bank: ING Belgium

We invite you to pay your subscription to benefit from the membership advantages. Please feel free to contact the BSR infodesk (info@bsr-web.be) should you have any question related to the online payment process.

Communication

Fill in the online form or send an e-mail to info@bsr-web.be.

Please include the following information:

- Last name & name
- RIZIV/INAMI number
- Invoice number

ESSR membership

BSR members can become a member for 60 Euro instead of 80 Euro (40 Euro for members in training). Please proceed as mentioned on the request for payment from the BSR, to be a part of the premier MSK imaging Society of Europe! (info@bsr-web.be)

Benefits

- Representation of musculoskeletal radiology on a European level
- Reduced registration fees at the Annual Meetings of the Society
- Free online access to Seminars in Musculoskeletal Radiology (Thieme)
- ESSR Newsletter
- Special online subscription rates for "Skeletal Radiology" (Springer) (PLEASE NOTE: Your online login data will be sent by Springer in a separate email after subscription)
- Special online and print subscription rates for "Skeletal Radiology" (Springer)
- Special print subscription rates for "Seminars in Musculoskeletal Radiology" (Thieme)
- Young investigator research grants
- Database of research interests
- Personal ESSR Account with access to Member's Directory, etc. (MyUserArea)
- ESSR Diploma in musculoskeletal radiology
- Educational material in musculoskeletal radiology
- Membership certificate
- ESOR exchange programme for fellowships



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