Medical devices:
the myths and the truth

Common paper of the
German National Associations of
Statutory Health Insurance Funds

High-risk medical devices are no less dangerous than pharmaceuticals, airplanes or trains. Nevertheless, in Europe, high-risk medical devices can be applied in humans without robust clinical studies and without marketing authorisation. Changing that to improve patient safety is a concern of patient organisations, physicians, and health insurance – and should also be a concern of the industry. But industry tries to prevent the necessary changes with questionable arguments.

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KNAPPSCHAFT

SVLFG Landwirtschaftliche Krankenkasse

vdek Die Ersatzkassen

GKV Spitzenverband

Content

1. Competition in quality and benefit to patients is the key to sustainable market success for European manufacturers of medical devices.

What the industry says

The industry needs Europe as a "lead market" with low hurdles to market access. High hurdles endanger the medical technology industry.

The facts

If the demand for appropriate quality requirements and greater patient safety posed a genuine threat to Europe as a location for medical technology, the USA could not be a global leader in this field.

Hence, appropriate demands on the quality and the benefit to patients (safety and efficacy) of medical devices improve the market opportunities for European manufacturers. And they also create the preconditions for success on the international market. If the requirements remain low – as set out in the draft regulation – cheap and low quality products will continue to appear on the market.

We should not sit back and watch - as has recently been the case with the solar technology sector - while an excellently positioned industry is squeezed out of the market by competitors offering cheap products. This can only have grave consequences. We have seen this happen with simple medical devices such as IV Catheters for some time now. Commercial Directors of hospitals prefer to buy cheap catheters, even if they are not sharp enough. In cases such as these, the doctor simply jabs twice until the catheter touches the vein. This is certainly not pleasant for the patient, and it is bad luck for the company that has invested in quality.

A hip replacement that undergoes extensive tests before it is widely used on humans is safer for the patient. However, a hospital that employs a qualitatively cheaper model receives the same sum as it would for a high-quality one. Under certain circumstances, however, a patient may have to undergo another operation much sooner than necessary, which is a great burden for the patient, entails further risks, and is expensive for health insurance beneficiaries.

Another example: A hospital receives the same amount no matter whether it inserts a pacemaker with a short or long-life battery.

We must not allow economic incentives to downgrade the benefit for patients and thereby endanger their safety. A "Proved in Europe" quality seal will have a far greater long-term value than a "lead market" that is satisfied with low quality, because it creates competitiveness on international markets. The European car industry, which is highly competitive qualitywise, demonstrates this in a most impressive manner. Hence it is better for politicians to help manufacturers to overcome reasonable hurdles than it is to set the bar too low for everyone concerned.

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2. PIP was, above all, a problem with approval.

What the industry says

The scandal surrounding breast implants made by the French company Poly Implant Prothèse (PIP) was due to the criminal activities of a few individuals.

The facts

The PIP scandal, in particular, shows that we have a **problem with approval procedures.** Both the low-quality industrial silicon used, and the low tear resistance of the outer-shell of breast implants present a serious health risk. It is an unacceptable state of affairs when a breast implant that is implanted in 300,000 women in Europe tears two to six times more frequently than is the case with other models.

This does not necessarily mean that criminals are at work here, but that the results should have come to light in reliable approval studies. In the USA, far higher requirements are placed on silicone[1] breast implants. The use of questionable PIP implants was never permitted there. The only types allowed were two implants with far more tear-resistant shells. And these were only admitted under the condition that further studies be conducted. The conformity assessment procedure currently prevailing in the EU did not identify excessive rupture rates, nor could it have done so. Hence this procedure is inadequate.

In the year 2000, PIP had already attracted the attention of the US Food and Drug Administration (FDA) during an examination of breast implants filled with common salt. As a result, the FDA removed these implants from the market. A corresponding "warning letter" from the FDA should have attracted greater attention from the Notified Body.[2]

Unannounced inspections at the manufacturers are absolutely necessary. **Patients can be protected from inferior medical devices only if adequate medical studies are conducted before such devices are approved.**

Source(s): *[1]Guidance for Industry and FDA Staff. Saline, Silicone Gel, and Alternative Breast Implants. Document issued on: November 17, 2006*
[2]FDA Warning Letter to Mr. Mas, Poly Implants Protheses, France. 22 June 2000

3. Compared with the approval of pharmaceuticals, market-access requirements for high-risk medical devices are very low.

What the industry says

The approval of high-risk medical devices is comparable with that of pharmaceuticals.

The facts

Pharmaceuticals are approved either by the European Medicines Agency (EMA) or a national approval authority. For a pharmaceutical product to be approved, high-quality clinical trials must be performed. These are usually conducted as so-called RCTs (randomised controlled trials) in which both a product's efficacy and adverse events are analysed. Once these have been completed, a risk-benefit analysis can be conducted.

Market-access requirements are much lower for high-risk medical devices than they are for pharmaceuticals:

- There is no approval by a government agency. In the case of high-risk medical devices, market access has so far been possible only with a CE marking, which is issued by a private Notified Body.
- Most high-risk medical devices are not subjected to a clinical trial before they enter the market, and nobody knows how many high-risk medical devices are subject to trials at all.[1,2]
- Frequently, clinical evaluations of high-risk medical devices do not include studies on human beings.
- In the case of medical devices, it is currently not necessary to prove their efficacy in curing symptoms/an illness, but only their performance. The clinical aim of a catheter ablation, for example, is to treat cardiac arrhythmia. Before a product can be brought to market, however, there only must be proof that the catheter can destroy heart tissue. Whether a cardiac arrhythmia can be cured is not the subject of the investigation.
- Whereas the "therapeutic area" of pharmaceuticals is clearly defined and their efficacy and safety must be verified by clinical studies performed within the framework of an approval procedure, the "intended use" of medical devices is much broader. Medical devices may be used in several areas of application other than those for which they are tested in clinical trials, if any are even carried out.

In the case of high-risk medical devices patient safety requirements must be oriented towards the approval procedure for pharmaceuticals.

Such differences when a product is being launched on the market are incomprehensible, because implants, in particular, and pharmaceuticals are introduced into the human organism and, in some cases, medical devices even release drugs in the body. The application risk for implanted medical devices is always particularly high: patients can stop taking drugs in case of side effects or ineffectiveness. However, if a drug-eluting stent has already been implanted, for example, removing it, if at all possible, is very complex and very risky.

It is unacceptable that whether the effects of a product are chemical or physical is what decides on their approval procedure; rather, because of the existing risk to health and to protect patient safety, high-risk medical devices must be sufficiently tested before entering the market and then adequately monitored - in the same way that pharmaceuticals are.

Source(s): *[1]Question posed by Bundestag deputy Biggi Bender to the Federal Republic of Germany. How many medical devices in Risk Group III, especially in the area of joint endoprosthetics, have been introduced since the 4th Amendment of the German Law on Medical Devices was introduced and to what extent have clinical tests actually been registered and performed for these medical devices. And further questions, 80ff in ibid. 17/9887*

[2]Thompson, Matthew et. al. Medical device recalls and transparency in the UK. BMJ 2011;342:d2973..

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4. Rules without incurring sanctions are ineffective.

What the industry says

Whenever there are reports of adverse events or defective medical devices, the problem is not that there are not enough regulations, but rather that these are insufficiently enforced. The existing rules are, therefore, adequate and need only be implemented.

The facts

According to the EU Commission's proposal, physicians are obliged to report device deficiencies and serious incidents. There is, however, no regulation explaining how the reporting of failures is to be monitored, or which measures are to be taken when reports are not submitted. Without an effective monitoring procedure and sanctions, a regulation is totally ineffective. Hence there certainly is a lack of regulation. In the same way, the prohibition on crossing the street when the traffic lights are red is effective only if this ruling is monitored here and there and transgressions are penalised.

- In the case of high-risk medical devices, the authorities are not obliged to carry out investigations. Even if studies based on high-grade methods identify failures of medical devices, the authorities are under no obligation to investigate. Take stents, for example, which are implanted in cerebral vessels combined with angioplasty to prevent strokes: a randomised controlled trial (SAMMPRIS) conducted in 2011 showed that intracranial stents developed to reduce the risk of strokes in patients with symptomatic intracranial arterial stenosis did not lower this risk: on the contrary, the number of strokes almost doubled – from 12.8 % to 20 % in the first year compared with medical management.[1]

  This means 78 avoidable strokes per 1,000 patients undergoing this treatment. In Germany alone, over 3,500 patients have been treated – without any controls – with this method since it was approved, whilst the SAMMPRIS trial had stopped enrolment after 451 patients due to a nearly three times increased rate of early strokes in patients treated with stenting. Such trial results are reason enough to suspect a risk that should have prompted the authorities to launch investigations.

- In the USA, adverse events of medical devices have to be reported to the authorities. This state of affairs has even led users of medical devices in

Europe to report adverse events to the FDA, the US admissions board, but not to the national authorities.

- Even according to the EU Commission's latest draft Regulation, there still remains a lack of transparency regarding reported failures. Consequently, one significant benefit to users – i.e. the reporting of failures by the latter – is lacking, since there is no feedback indicating whether such failures are individual cases, or frequently reported failures. The example of the USA shows that transparency is possible. There, all reported failures are accessible to the public on the FDA website.

Source(s): *[1]Chimowitz MI, Lynn MJ, Derdeyn CP et al. Stenting versus Aggressive Medical Therapy for Intracranial Arterial Stenosis. N Engl J Med 2011 365; 11: 993-1003*

5. Approval by the authorities provides security and can be sufficiently fast.

What the industry says

Approval by government agencies does not provide greater safety than that provided by CE-labelling by the Notified Bodies (New Approach) and delays patient access to medical devices (keyword: "brake on innovation").

The facts

The US Food and Drug Administration (FDA) approval procedure shows that - in comparison with the EU - a higher degree of patient safety can be achieved and rapid access to medical devices ensured without having to sacrifice the proof of their efficacy and safety in trials.

1. Greater security through state approval:

In 2012, the FDA, for example, published examples of high-risk medical devices that could enter the European market and have led to considerable damage to health there, but have never been approved in the USA. For example:

- PFO Occluders (PFO: patent foramen oval; an opening that exists between the two upper chambers of the heart during fetal development, which fails to close after birth). At least 12 PFO Occluders - implanted in the heart to prevent strokes - have been approved in the EU. Later clinical trials on the safety and effectiveness of PFO Occluders conducted to support their applications for approval in the USA showed that one of the PFO Occluders approved in the EU was no better at preventing strokes than blood-thinning medications. In contrast to blood-thinning medications, under certain circumstances it may cause heart perforations and other serious complications. Furthermore, one of these products (Solysafe by Swiss Implant) fractured inside many patients. As the company had to register insolvency, not even those patients who were hit hardest received compensation.

- After limited tests had been performed, stent implants made by various manufacturers for the treatment of aortic aneurysms (bulging of the aorta) entered the European market. During the approval procedure in the USA, the FDA discovered that many of the products approved in the EU bore grave risks for the patients, including blood clots, implant failures and ruptured aneurysms.

- CoSTAR, a drug-eluting stent which entered the European market after limited tests, was taken off the market in the EU again when a study for its approval in the USA showed that patients who received the CoSTAR stent needed repeat procedures, suffered heart attacks and died more often than patients who received the previous drug-eluting stents.[1]

The test conducted by journalists working for the British Medical Journal and the Daily Telegraph shows how unreliable the procedure with Notified Bodies is:2 It seemed to be absolutely no problem to obtain the CE marking for a hip prosthesis and to introduce it onto the market, even though the same model

had previously been withdrawn from the market for causing severe damage, and the patient had been advised to have this endoprosthesis replaced in a further operation.

For example, in 2009, the modular hip prosthesis ANA.NOVA® MII neck entered the European market even though its construction material was similar to the previously recalled Falcon Varicon hip prosthesis. The Falcon Varicon had been recalled due to corrosion, which resulted in patients experiencing fractures. Like Falcon hip prosthesis patients, those with ANA.NOVA MII neck prosthesis experienced fractures shortly after implantation, which led to a voluntary recall of the ANA.NOVA MII neck in 2011.

In terms of pharmaceutical approval, this would be the equivalent of a manufacturer being allowed to bring generic Contergan (thalidomide) to the European market in 2013 as a soporific for pregnant women without performing further clinical trials.

2. The time required to obtain approval to market the product in comparison with the USA:

It is also necessary to challenge the assertion that, owing to the rules on approval, medical devices would require much longer to access the US than the European market.

In the USA, the approval of products which can refer to trials on products already on the market (the so-called 510(k) procedure) takes about 90 days on average. In the case of products whose approval requires new trials by law, the approval procedure (the so-called PMA procedure) in the USA lasts about 518 days on average. In Europe, there is no standard period for obtaining a CE marking. There is no standard time from the date the application is filed to the granting of a label by the Notified Bodies.

In Cohen's[2] article dating from the year 2012 "How a fake hip showed up failings in European device regulation" (BMJ 10/2012), the Notified Bodies in Slovakia and Turkey are described as being "very very fast". Yet in this very example, patient safety was totally neglected.

In the case of other Notified Bodies (such as TÜV in Germany), it takes several months to obtain a CE marking for an endoprosthesis, the process costs high five-figure fees, and is subject to rigid terms and conditions. One manufacturer, for example, was enjoined to present credible clinical data before re-certification would be issued.

A comparison between the processing periods in the USA and the EU reveals another grave falsification:

- In the USA, the assessment procedure period also includes the conception and execution of the necessary studies. This is likely to be the prime reason why the procedure takes 518 days on average (in the PMA procedure).
- When clinical studies are performed in Europe, they are usually done prior to their evaluation by the Notified Body. Hence, in Europe, the time in which the trials are designed and executed is not included in the time required to approve the product for the market in Europe.

Source(s): [1]FDA. Unsafe and Ineffective Devices Approved in the EU that were Not Approved in the US. May 2012
[2]Deborah Cohen. Faulty hip implant shows up failings of EU regulation. BMJ 2012;345:e7163

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6. Robodoc has caused serious harm to many people in Europe.

What the industry says

Robodoc is not a suitable argument in favour of central approval, since Robodoc is also approved to operate in the USA.

The facts

It was only after the software had been modified, ostensibly improving its safety, that the device was approved in the USA in 2008.[1]

Even if belated approval in the USA was not justifiable, this does not excuse the market access in Europe in 1996 and the harm done to many European patients.

The background: It seems logical that a surgical robot employed in the implantation of a hip replacement and capable of operating within a tolerance range of 5 hundredths of a millimetre - thus enabling it to work far more precisely than a surgeon operating manually - will achieve a far more accurate precision fit and better healing, and hence a shorter period of post-operation treatment as well as greater and quicker weight-bearing capacity and mobility. Initially, the device was not approved in the USA. For the European market, an inspection of its technical safety by the TÜV-Rheinland (an organisation specialised in testing and inspecting materials) in 1996 was sufficient to approve its use throughout Europe. Meaningful clinical trials were not necessary for its approval and were not conducted. Many hospitals in Europe acquired these surgical robots at a price of approx. € 250,000 each. In the course of time, however, it became apparent that patients who were operated on using the so-called RoboDoc method suffered severe side effects up to 25% more often than those operated without RoboDoc.[2,3,4]

In particular, injuries to the gluteal muscles occurred more frequently, as did paralysis, which was often accompanied by considerable restrictions to patients' ambulatory ability. Furthermore, the robots often cut too much bone off the pelvis. Nor were there any advantages: neither in terms of greater resilience and load-bearing capacity, nor in greater durability. Hospitals stopped using Robodoc and suffered financial losses because of their unsuccessful investments. It was the patients, however, who suffered the most, because the operation method employed frequently left them disabled for life.

Source(s): *[1]FDA. Unsafe and Ineffective Devices Approved in the EU that were Not Approved in the US. May 2012*

[2]Honi M et al. Comparison of Robotic-Assisted and Manual Implantation of a Primary Total Hip Replacement: A Prospective Study. J Bone & Joint Surgery, 2003; 85:1470-1478

[3]Schulz AP, Seide K, Queitsch C, et al. Results of total hip replacement using the Robodoc surgical assistant system: clinical outcome and evaluation of complications for 97 procedures. Int J Med Robot 2007;3(4):301-6

[4]Schrader P. Consequence of evidence-based medicine and individual case appraisal of the Robodoc method for MDK and the malpractice management of insurance funds and the principles of managing innovations. Gesundheitswesen 2005;67(6):389-395

7. The manufacturers save on limited liability insurance. In the case of damages, the damaged parties often go empty handed.

What the industry says

The companies combined in the BVMed assume responsibility for the defective products. A third-party limited liability insurance is too expensive for the manufacturers.

The facts

For the aggrieved parties, there is no adequate protection against potential damage caused by defective products. If, for instance, a company has to file for insolvency as a result of serial damage, and if claims for damages or compensation for personal damage cannot be asserted in insolvency proceedings, patients will generally come away empty handed if the company has no or insufficient liability insurance.

Therefore, if the aforementioned claims against the manufacturer cannot be asserted, the follow-up costs, for example, of additional treatment and/or the costs of care are then frequently transferred to the health and nursing care insurances, or to other social insurance carriers, thus encumbering the collective body of the insured. It is, however, not the task of the health and social insurances, which are funded by contributions, to bear the entrepreneurial risks of the manufacturers of medical devices.

For example: the ESKA Implants company had to file for insolvency due to serial damage caused by one of its products. The item in question was a hip implant whose cone adapters frequently broke. Regulation of

the compensation for personal damage and costs for an exchange operation are still pending.

Another example: In the case of a breast implant manufactured by the Poly Implant Prothèse (PIP) company, the company had to file for insolvency after the fraud scandal became known. For example, in Germany, the patients who had had the implants inserted for cosmetic reasons (so-called cosmetic operations) and suffered damage ended up paying for the new implants and the legally stipulated share of the treatment costs out of their own pockets.

A third example: The Austrian company Falcon Medical GmbH introduced onto the market a modular hip implant that broke very often. The patients affected were advised to have the hip exchanged owing to the risk of bone fracture. The liability insurance sum, which was too low, was evidently used up very quickly, however; as a result, the manufacturer, instead of seeking a settlement, chose to be sued.

These examples show that obligatory third-party liability insurances with a sufficient liability limit and a direct claim on the part of the damaged party vis-à-vis the liability insurer, are necessary. Under no circumstances may a situation be allowed to arise in which a harmed patient or a statutory health or nursing care insurance or any other social insurance carrier should be left paying for the costs of the ensuing treatment. Nor should a situation arise whereby the patient does not receive compensation for personal suffering when the manufacturer of a substandard product is insolvent, just so that the companies involved can save money on their insurance policy. The fact that obligatory third-party liability insurances are possible is evident not only in the case of the products for which insurances are obligatory on the basis of the German Radiation Protection Ordinance.

The example of France shows that third-party liability insurances are possible for all high-risk medical devices.[1,2] In cases in which third-party liability insurers refuse to insure manufacturers, France, on the basis of a regulation, calls in the Bureau Central de Tarification and sets the insurance premium. If the third-party liability insurer still refuses to set a premium, it can - in France - be prohibited from operating as an insurer. Incidentally, an examination by a third-party liability insurer of the risk arising with a medical device has the advantage that devices presenting unwarrantably high risks can be identified before they enter the market and do not, therefore, appear on the market in the first place. However, an EU Regulation must ensure that the obligation to insure is not limited to one state territory; this means that no matter where damage is caused within the EU, insurance coverage must be provided.

As far as the cost arguments presented by the industry are concerned, if all manufacturers have to bear liability insurance costs, they will pass these on to the customers in the price. Incidentally, one can assume that responsible manufacturers will now voluntarily conclude third-party liability insurances to protect their companies from financial losses or insolvency.

As a supplement to an obligatory third-party liability insurance, a compensation fund (guarantee fund) should - as is the case in France - be provided for patients (Commission d'Indemnisation des Victimes d'Infractions - C.I.V.I), because the aggrieved party would no longer be able to assert any claims whatsoever if the manufacturer and the third-party liability insurer were no longer able to pay. (Example: breast implants manufactured by the French company Poly Implant Prothèse (PIP): Aggrieved Spanish parties initially lost their lawsuits against the third-party liability insurer, Allianz France, because the contract of insurance limited insurance coverage to French territory. Originally, the Allianz France did not want to insure PIP. In this case, it was "compelled" to do so via the Bureau Central de Tarification, but was able to limit the contract to damages occurring in France.)

Source(s): *[1]www.legifrance.gouv.fr/affichCodeArticle.do?cidTexte=LEGITEXT000006072665&idArticle=LEGIARTI000020891399&dateTexte=20100217*

[2]Endrös, Florian Medizinhaftung und Versicherung in Frankreich -Neue Rechtsprechung. Versicherungspflicht für Medizinprodukte. Phi – 6/2003:227

8. For pharmaceuticals, the benefit to patients must be proved in methodically high-quality trials. High-risk medical devices are even able to enter the market completely without trials.

What the industry says

Clinical trials of medical devices are already subject to the same high requirements today as pharmaceuticals.

The facts

As a rule, randomised controlled trials that prove the efficacy and safety of pharmaceuticals are required before approval is given. There are no requirements for medical devices in terms of the methodical quality of the trials. Even simple and meaningless case series are accepted as clinical trials. Unlike with pharmaceuticals, the efficacy of medical devices must not be proved; it suffices if their performance is proved. There is even a possibility for high-risk medical devices to completely waive clinical trials.

High requirements only exist in the regulations pertaining to the execution of trials (ethics committee approval, monitoring). These, however, are not sufficient to say anything about the benefits or safety of devices.

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9. The requirements for market access for Class III medical devices in no way reaches the standards that apply for the approval of pharmaceuticals.

What the industry says

In products of the highest risk category (Class III) – which includes most implants – the legal requirements that apply for CE approval are similarly high to those under pharmaceutical law.

The facts

There is no CE approval, but only a CE marking issued by Notified Bodies for high-risk medical devices. Most high-risk medical devices enter the market without trial and not even the German Federal Ministry for Health can say how many of the 371 high-risk medical devices that have entered the market in Germany since 2010 were tested beforehand in clinical trials.

Furthermore: **If the situation was as the medical device industry maintains, then there would be no reason why there shouldn't be the same trial-based proof of efficacy for high-risk medical devices as there is for the approval of pharmaceuticals.**

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10. Good examples show: randomised trials are also possible for medical devices.

What the industry says

Pharmaceuticals and medical devices are fundamentally different, which is why randomised controlled trials (RCTs) are not possible and official approval does not make sense.

The facts

Successful trials like SAMMPRIS (Stenting versus Aggressive Medical Therapy for Intracranial Arterial Stenosis) show that meaningful randomised controlled trials for medical devices are possible.[1]

Official approval is just as appropriate and necessary for high-risk medical devices in terms of patient safety as it is for pharmaceuticals.

- There are examples where products can be approved either as a pharmaceutical or as a medical device.

- Implants, like pharmaceuticals, are introduced into the human organism and in some cases even release drugs into the body. The application risk for implanted medical devices is always particularly high: patients can stop taking drugs if they are ineffective or have side effects. However, if a drug-eluting stent has already been implanted, for example, removing it, if at all possible, is very complex and very risky.

- It is unacceptable that whether the effects of a product are chemical or physical is what decides on their approval procedure; rather, because of the existing risk to health and to protect patient safety, high-risk medical devices must be sufficiently tested before entering the market and then adequately monitored - in the same way that pharmaceuticals are.

Source(s): [1]Chimowitz MI, Lynn MJ, Derdeyn CP et al. Stenting versus Aggressive Medical Therapy for Intracranial Arterial Stenosis. N Engl J Med 2011 365; 11:993-1003

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11. Even complex trials can be carried out.

What the industry says

Trials of medical devices in surgical medicine are extremely complex.

The facts

High complexity must not be a reason for not examining the benefits of a medical device.

The benefit of a medical device often depends on two factors; on the medical device itself and on the skill of the user (for example, the surgeon). As such, these two factors form a chain that is only a strong as its weakest link. If the medical device is not effective and bears an excessively high risk, a benefit for the patient cannot be reached no matter how good the surgeon is. That is why it is necessary to prove the patient benefit of the device in trials. Take the example of intervertebral disk prostheses: 20 years after the first reports about these prostheses were published, there is still a complete lack of proof of any benefit to patients[1,2]. At the same time, however, there are serious risks, among these the danger of causing severe paralysis if an intervertebral disk prosthesis slips.

When a medical device is very complex, it bears a high risk in terms of errors in its application. (If it is necessary to hit the head of a hip replacement with a very precisely defined impact using a hammer so that this sits tightly enough on the stem but without breaking it, then another product where such errors cannot occur is superior).

Source(s): *[1]Gravius S, Weißkopf M, Ohnsorge J; Maus, U, Niethard F, Wirtz DC: Die lumbale Bandscheibenprothese: Eine narrative Übersicht Dtsch Arztebl 2007; 104(38): A-2592 / B-2290 / C-2222*

[2]Gamradt SC, Wang JC. Lumbar disc arthroplasty. Spine J. 2005 Jan-Feb;5(1):95-103.

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12. High-quality trials are also possible without blinding.

What the industry says

In trials of medical devices in surgical medicine, blinding and placebo comparisons are difficult.

The fact is

Just because blinding is difficult does not mean that no randomised controlled trials (RCT) can be carried out. Examples: SAMMPRIS[1] (see page 6) and PREFERE (the largest clinical trial in the area of prostata cancer therapy. In this trial, the four treatment options generally applied in early forms of prostate cancer were compared with one another for the first time).[2]

Blinding is not a necessary prerequisite for randomised trials. Faked surgical interventions are possible. Example: Arthroscopy trial by Bruce Mosley (A Controlled Trial of Arthroscopic Surgery for Osteoarthritis of the Knee) and Alexandra Kirkley (A Randomized Trial of Arthroscopic Surgery for Osteoarthritis of the Knee)[3,4]: One group was given arthroscopic surgery to the knee, while the other group were given skin incisions.

A blinded comparison with the standard treatment is also possible in individual cases.

Source(s): [1]Chimowitz MI, Lynn MJ, Derdeyn CP et al. Stenting versus Aggressive Medical Therapy for Intracranial Arterial Stenosis. N Engl J Med 2011 365; 11:993-1003

[2]www.prefere.de

[3]Mosley JB, O'Malley K, Petersen NJ, et al. A Controlled Trial of Arthroscopic Surgery for Osteoarthritis of the Knee. N Engl J Med 2002;347:81-88

[4]Kirkley A, Birmingham TB, Litchfield RB, et al. A Randomized Trial of Arthroscopic Surgery for Osteoarthritis of the Knee. N Engl J Med 2008;359:1097–1107

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13. The learning curve in particular speaks in favour of investigating the benefits before widespread introduction.

What the industry says

Trials of medical devices in surgical medicine depend on the user's learning curve.

The fact is

If a new complex surgical method is introduced, this must first be learned by those who will apply it (for example, surgeons). As the number of such operations being carried out increases, surgeons become increasingly routine in their work and results improve over time in line with the increase in skilfulness/experience. This learning curve must be gone through in all hospitals in which a new product or method is used and, initially, it works contrary to the benefit of a medical device.

A learning curve creates lower prospects of success for the patients affected. This is why it is not ethically justifiable to simply accept the learning curve and the concomitant harms comprehensively in all hospitals if medical products (only 5% of innovations prove to be successful in the end) later prove to be ineffective or harmful. There is therefore a lot to be said in favour of first of all only allowing new medical products to be tested in trials at selected locations (innovation centres), so that the benefits of the product and the extent of the learning curve can be evaluated under optimum conditions. The necessary minimum quality requirements can also be derived from this. If the benefits have been proved, doctors at the hospitals to receive the product can learn the method from their colleagues there thus running through a considerably shorter learning curve.

14. New products must be at least as good as tried and tested ones and must measure up to these.

What the industry says

Trials of medical products in the area of surgical medicine are often too long; in the case of the durability of endoprostheses, for example, it is only possible to separate the wheat from the chaff after several years.

The fact is

Hip replacements that last for more than 25 years have existed since the 1980s. In people who were operated on using large-head metal-on-metal hip replacements, these had to be replaced again already after 5 years.[1,2] This is a disaster for those affected. Problems are often apparent at an early stage. For example, failures of the ASR hip replacements (metal on metal) from DePuy were already mentioned in an Australian implant registry 2 years after their market launch.

Post-marketing examinations for the long-term results are possible. Long-term results are available to registries.

DEMAND: When products with very long durability are already on the market (as is the case with hip replacements), higher demands must be placed on the long-term results of new products.

Source(s): [1]Meier, B. Hip Implants U.S. Rejected Was Sold Overseas. New York Times. 02.14.2012

[2]Hodgkinson J, Skinner J, Kay P. Large Diameter Metal on Metal Bearing Total Hip Replacements. British Orthopaedic Association, British Hip Society. März 2011

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15. The benefit proved under optimum conditions in a trial is the prerequisite for the benefit gained in everyday use in hospitals.

What the industry says

The transfer of results from trials of medical devices in surgical medicine into everyday use in hospitals is questionable.

The facts

In clinical trials, research is always carried out under optimum conditions and over relatively short periods of time; this is also true of pharmaceuticals. If efficacy is proved in pharmaceuticals trials, the substances in question are then used in so-called post-marketing trials under supply conditions. In this real environment, effectiveness is generally less. In trials of medical devices, this is also the case. What is more, the surgeon carrying out an operation is also a factor that plays a role. The effectiveness under real supply conditions is however highly available to registers and error reporting systems.

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16. Testing the safety of aeroplanes, trains and cars is expensive – but necessary.

What the industry says

Trials of medical devices in surgical medicine are very cost-intensive, especially trials in which two therapies/methods are being compared (head-to-head trial).

The facts

Nobody wants to be a medical guinea pig only because the industry shies away from costs for trials. It is taken as a matter of course that safety in cars and aeroplanes is also part of the costs. With pharmaceuticals, trials are prescribed in a direct comparison to standard therapies and are also carried out in this way.

17. Patient safety is more important than fast product cycles.

What the industry says

Because of faster product cycles, trials of medical devices are not possible in the area of surgical medicine.

The facts

Patient safety should be given more weight than fast product cycles. Well-established and tried & tested medical devices already exist for most areas of application (for example, hip replacements, pacemaker, implanted defibrillators). It has been shown again and again that many innovations are inferior to the already existing products. As such, hip replacements, for example (short stem hip implants, modular hip replacements, large-head metal-on-metal hip replacements), or defibrillator leads came onto the market because of fast product cycles and caused damage to patients. Not every innovation is automatically an improvement, which is why fast product cycles are not generally necessary from a medical point of view. In aeroplanes, more value is placed on safety than on fast product cycles.

18. High-risk medical devices count for less than 2 % of all medical devices.

What the industry says

Far too many members of staff would be required for a central approval of high-risk medical devices by the European Medicines Agency (EMA).

The facts

When specialists for high-risk medical devices no longer have to be employed at more than 80 Notified Bodies, but instead work centrally at the EMA, staff requirements would even drop.

Only less than 2 per cent of medical devices fall under the high-risk category. The DIMDI database in Germany lists 1,052 high-risk medical devices. There is no data available about the number of high-risk medical devices that come onto the market throughout Europe. Estimates state that Europe-wide around 2,000 high-risk medical devices are on the market. From 2010 to 2012, 371 new products in this category came onto the European market in Germany.

19. Fast access for medical devices restricted to innovation centres and trials are compatible.

What the industry says

Trials of medical devices in surgical medicine are time-consuming and therefore cause delays in such products entering the market.

The facts

Approval in innovation centres under controlled conditions enables early access to the market. This is the arrangement in the USA (IDE=Investigational Device Exemption).

20. The CE marking does not guarantee a benefit and patient safety.

What the industry says

The certification of medical devices stands for tried and tested safety.

The facts

Even if it was guaranteed that the clinical evaluation of a medical device proved its safety and effectiveness to a high degree, one central problem still remains: unlike in the USA, the intended use of medical devices generally covers a much broader area than the contents of the clinical evaluation. In addition, compliance with the intended use is insufficiently checked.

Example: Gore's Viabahn® stent endoprosthesis was tested in clinical trials for treating vascular constrictions in the femoral and groin artery. The manufacturer advertises on its website with exactly these areas of application. In Europe, by comparison, it is possible to use the product in a wider range of applications, for example, in arteries in the abdominal cavity or even in cerebral vessels. Furthermore, it is not only limited to treating constrictions, but is also used in cases of vascular dilation (aneurysms), that is, a completely different clinical picture without trials for this application having been carried out.

21. Number of new high-risk medical devices far lower.

What the industry says

The American approval authority FDA only issues 50 approvals per year; in the DIMDI database, 300 new high-risk medical devices with market access (CE marking) via Germany are listed every year.

The facts

The DIMDI database recorded 371 new high-risk medical devices for the period from March 2010 to June 2012, that is, a period of 2 years and 3 months. This amounts to around 165 per year. It is questionable, however, whether the figures can even be compared. For example, how many products make up a hip replacement (stem, head, cup, inlay = 4 or a system = 1). The market entry of 300 high-risk medical devices per year that the industry is talking of is therefore an inaccurate figure.

22. Safe and fast access to life-saving innovations can only be guaranteed in trial centres.

What the industry says

Patients need fast access to life-saving innovations.

The facts

Wide access to proven life-saving innovations is supported in full by the statutory health insurance companies. Most high-risk medical devices are not life-saving. Furthermore, there already exist mostly well-tested and effective treatment methods and products on the market, for example, implantable defibrillators or hip replacements. Many supposedly "life-saving" medical devices are used on thousands of patients before important trial results are available, in the hope of saving lives. However, again and again, innovative medical devices turn out to be harmful in retrospect.[1,2]

Safe access to innovations, the benefits and risks of which one does not know enough about, is best provided as part of trials and in institutes that are familiar with these innovations.

Source(s): *[1]Genous Stent zur Behandlung von Gefäßverengungen in den Herzkranzgefäßen: http://www.g-ba.de/downloads/39-261-1681/2013-03-21_KHMe-RL_AK-Stents_BAnz.pdf?*

[2]GSilk Stent zur Behandlung von Erweiterungen in Gehirnarterien: http://www.mhra.gov.uk/Publications/Safetywarnings/MedicalDeviceAlerts/CON076289

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23. The benefit to patients and safety of renal denervation is unclear

What the industry says

In Europe, for example, patients are treated with the life-saving "renal denervation", while 7 million patients in the USA have to wait for this innovation to be approved.

The facts

With these medical devices sympathetic neural pathways that lead to the kidneys are deliberately atrophied in order to reduce blood pressure. In the year 2012, the Ludwig Boltzmann Institute examined the existing trials of "renal denervation" in a HTA report.1 Conclusion: while blood pressure does indeed drop, it doesn't drop enough in some patients and in others it doesn't drop at all. By comparison, the short- and long-term side effects such as damage to the renal arteries or backache and kidney pain increase. Whether the observed drop in blood pressure has an effect on the illness or mortality of the patients is not known. It is therefore fully unclear whether these medical devices have relevant effectiveness. In any case, the nerve pathways treated are irrevocably killed off.

Source(s): *[1]Reichel M, Zechmeister-Koss I. Perkutane renale Denervation bei therapieresistenter Hypertonie. Decision Support Document Nr. 45/ 1. Update 2012*

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24. Conclusions from the insufficient European market surveillance on the safety of medical devices are absurd.

What the industry says

Trials have shown that the US approval system safeguards controls of conformity to the same extent as the European system.

The facts

This statement is based on trials carried out by the Boston Consulting Group, according to which there are no significant differences between recall rates in the USA and Europe. As recalls are measures carried

out on the own responsibility of the manufacturers, it is no wonder that these do not differ between the USA and Europe. Unlike in Europe, a public authority in the USA can restrict or even withdraw the approval of medical devices because of reservations about safety. These measures are only taken seldom, but still make a considerable contribution towards patient safety. As such, the USA withdrew approval for all silicone breast implants for 14 years following a scandal at the end of the 1990s. In Europe, the same products were still allowed to be implanted.[1] Because of the increased rate in strokes (SAMMPRIS) as a severe side effect, the American approval agency, the FDA, also drastically restricted approval of the so-called "wingspan stents" to such an extent that only a very small group of patients can be treated using them; such restrictions have still not been imposed to date in Europe.[2]

Abdominal belts used to restrict patients' movement have led again and again to serious injuries and fatalities. The Federal Institute for Drugs and Medical Devices (BfArM) has warned against using such belts, however a recall by the competent regional authorities has not taken place to date.

The fact that recall rates in Europe are not higher therefore is in no way proof of the same level of patient safety. All one can conclude from this fact is that the market surveillance system does not function optimally.

Source(s): *[1]Information der FDA über Neuzulassung von Brustimplantaten: Update on the Safety of Silicone Gel-Filled Breast Implants (2011) – Executive Summary. 22.06.2011*

[2]Zulassungsbeschränkung der FDA für den Wingspan Stent: FDA Safety Communication: Narrowed Indications for Use for the Stryker Wingspan Stent System. 31.1.2013

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25. Doctors will only be able to successfully treat patients with a medical device if it has a benefit to patients.

What the industry says

The efficacy of medical devices is always dependent on the users. A medicine only has to be swallowed.

The facts

The benefit of a medical device often depends on two factors; on the medical device itself and on the skill of the user (for example, the surgeon). As such, these two factors form a chain that is only a strong as its weakest link. If the medical device is not effective and bears an excessively high risk, a benefit for the patient cannot be reached either by a good or a bad surgeon. That is why it is necessary to prove the benefit of the device in trials. What is more, particularly complex medical devices also require special qualifications in the user.

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26. The burden of proof when faced with claims for damages must be distributed fairly.

What the industry says

The legal situation of patients who have been injured is sufficiently guaranteed.

The facts

Claims for liability are set down in product liability legislation. This conflicts with the fact that, in the case of medical devices, we are not dealing with a product of everyday life, but an object that is used to heal or prevent illnesses and therefore in the widest sense render healthcare services on/in human be-

ings. For this reason, the right of access to information and strict liability must be anchored in the Medical Devices Ordinance and taken out of the Product Liability Directive. What is needed is for the burden of proof to be fairly distributed in cases of claims for damages. If product defects and damage can be proven, then the presumption of a causal connection in favour of patients must apply under law, that is, it can then be assumed that the damage caused has been caused by the product.

27. The burden of proving who is to blame must not be offloaded onto patients.

What the industry says

The medical device was perhaps inserted wrongly and is therefore not responsible for causing the damage that occurred.

The facts

In cases where there is more than one potential culpable party (for example, the manufacturer of the medical device or the surgeon), the risk of litigation should not be offloaded onto the damaged patients. If, in addition to a product error, medical malpractice must also be taken into consideration as a cause of the damage, the burden of proof for the malpractice as the cause or contributory cause of the damage should lie with the manufacturer of the medical device.

28. To assert claims for damages, patients who have suffered damage must be granted a right to access information from manufacturers and the public authorities.

What the industry says

It is not possible for patients who have suffered damage to gain access to the product documents of the manufacturers of medical devices because these are business secrets.

The facts

Because of the risk of litigation, patients often waive asserting their claims because they do not have access to documents before going to court which would help them to clarify whether the medical device was defective.

To guarantee equal opportunities in litigation, it is necessary that there be a right to access information from the manufacturer, which puts the damaged party in a position to obtain all facts that are necessary to assess his claims. These are, for example, damages to health that have occurred in connection with the medical device, symptoms that reappear following renewed use or which disappear after the medical device has been removed.

The right to information must also apply vis-à-vis European and national authorities as well as the Notified Bodies.

29. Extensive rights of information must be guaranteed.

What the industry says

The intended improvement in public access to the electronic vigilance system (Eudamed) is too extensive.

The facts

The planned restricted public access to the electronic vigilance system outlined in the draft ordinance is unsatisfactory. All users, those who work in healthcare professions as well as healthcare insurers and social security organisations have a justified interest in obtaining information at an early stage when something occurs. For this reason, extensive rights of information should be guaranteed.