

# Lambda Research Newsletter

March 2020



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Volume 3 / March 2020

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## ▶ GLOBAL NEWS

### 1. Global biopharmaceutical commitments to fight against COVID-19



The International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) has committed the leading biopharmaceutical industry to make its efforts by using its skills, technology and resources to make safe, effective diagnosis against COVID-19.

The commitments are:

- To use industries expertise and to speed up safe and effective vaccines;
- To support global healthcare systems and to share tools and insights to test potential therapies and vaccines;
- Increase industries manufacturing capacity once successful vaccines or medicines are developed;
- To supply all essential medicines, vaccines or diagnostic for patients with life threatening diseases.

The biopharmaceutical industry jointly work with governments, WHO and health systems across the world, they have started to screening of medicines to identify potential treatment against novel corona genome sequence (SARS-CoV-2).

Currently, more than 80 clinical trials are going on to test new and existing medicines. Now IFPMA members are developing new diagnostic tests, vaccines or treatments and testing existing medicines to treat those who are infected with the virus.

Source: [ifpma.org](http://ifpma.org)



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## ▶ GLOBAL NEWS

### 2. Serological test for COVID-19



The Indian Council of Medical Research (ICMR) has invited antibody kit (serological tests) for the diagnosis of COVID-19. Serological test is a blood test that can be used to determine a person has corona virus infection based on the presence of antibodies in the blood.

The serological test is not specific but test can detect presence of viral DNA even before antibodies are present. This could be used as specific test for COVID-19 at an economical price.

This serological test is basically for antibodies in your blood. The ICMR has estimated approximately 1 million test kits.



Source: [economictimes.indiatimes.com](http://economictimes.indiatimes.com)



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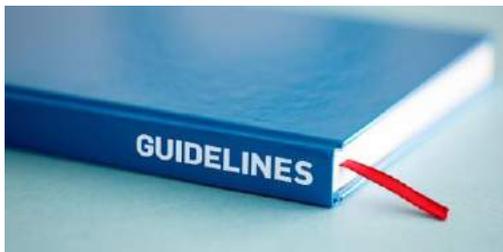
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## ▶ GLOBAL NEWS

### 3. NHM guideline for health care workers



The National Health Mission (NHM) has developed guideline for health. According to the WHO, the primary health care (PHC) has to ensure about safety and focused in providing care in the community.

The National Health Mission (NHM) has suggested health the primary health care (PHC) team, to ensure safety for themselves and their families, while performing duties.

According to the NHM guideline:

- Avoid gatherings such as social functions, etc
- Maintain a safe distance of at least one meter between you and other people
- To avoid direct droplet contact
- Stay at home as much as possible
- Washing hands frequently
- To cover both your mouth and nose with folded cloth or mask

The health workers also have to differentiate between myth and facts on the spread of the infection, as it would contain rumors on the spread of the infection.

Source: [economictimes.indiatimes.com](http://economictimes.indiatimes.com)



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## ▶ GLOBAL NEWS

### 4. Researchers developed new tool for autism patients



The Children's Hospital  
of Philadelphia®

The researchers from Children's Hospital of Philadelphia (CHOP) have developed a new tool for autism spectrum disorder (ASD) patients. This tool named the PROMIS Autism Battery-Lifespan (PAB-L) and it has been used to test an autism-specific lifespan quality of life using the National Institutes of Health Parent-Reported Outcomes Measurement Information System (PROMIS®).

The tool was administered in autistic children (5-15), adolescents (14-17) and adult (18-65) (self-reported) patients, the results were compared with the general population.

The online survey was completed in total 912 candidates, the study measures feasibility and survey was easy to understand and covered all the important topics.

Women and teenage girls of the autism spectrum were reported in higher levels of anxiety and sleep problems compared with male. As this is the first study to use this tool, however more data is required.

Source: [business-standard.com](http://business-standard.com)



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## ▶ PHARMA INDIA

### 1. WHO: India has potential capacity to fight COVID-19



**World Health  
Organization**

The World Health Organization (WHO) has said that the India has potential capacity to fight against corona virus as they have tremendous experience of two pandemics (small pox and polio).

India is very populous country and virus has been increased in very highly and populated country, India needs number of labs where surge is seen.

According to WHO, the number of positive corona cases has surpassed 3,30,000, while the number of deaths have crossed 14,000.

Source: [economictimes.indiatimes.com](http://economictimes.indiatimes.com)



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## ▶ PHARMA INDIA

### 2. Government launch COVID-19 tracing app



The Indian government is to launch a smart phone application to help people to check cross zone of corona positive tested patients. This COVID tracker will be available in English and other Indian languages.



Currently, the application is being examined by committee, over the last few days Ministry of Electronics and Information Technology (MEITY) had been testing an Android based technology named “corona kavach”, Niti Aayog has also a similar efforts.

The application will use the phone number along with location data of the smart phone and match the person’s movement with the Indian Council of the Medical Research (ICMR) data.

The biggest challenge is scalability we have to ensure that it should be work an effectively when millions of users are using this app.

Source: [economictimes.indiatimes.com](http://economictimes.indiatimes.com)



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## ▶ PHARMA INDIA

### 3. AIIMS developed sub-committee for management of COVID-19



The AIIMS has established sub-committee for management protocol of covid-19.

The sub-committees are:

- Resource management committee
- Human resource committee
- Diagnostic management committee
- Medical management committee

Medical management committees has developed for various patient care areas and estimate requirement of materials, machines, manpower and diagnostic backup that will be required to the patients.

After checking local availability the various requirement resources will be forwarded to resource management committee and human resource management committee, the resource management team will look out the requirement of material and machines and decide on that.

The human resource management committee will look into requirement of manpower and mobilize manpower in various locations. The diagnostic management committee will evaluate capacity to do testing for COVID-19 and work on it where require.

All healthcare workers will be trained to handle and use personal protection equipment (PPE) and able to take care of themselves and patients.

Source: [businessstoday.in](http://businessstoday.in)





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## ▶ PHARMA INDIA

### 4. Testing is mandatory for all categories of new drugs approval



The Drugs Controller General of India (DCGI) has said that testing is mandatory for all categories of new drugs approval under the New Drugs and Clinical Trials Rules, 2019, testing has been required which are pharmacopoeial products or which have additional strengths of already approved new drug.

CDSCO approves permission for import and manufacture of new drugs for sale and distribution, but testing of the new drugs in the Central Government Laboratories is mandatory before their approval.

As per DCGI notice, the new drug testing process will be carried out by the Central Government Laboratories as per the following timelines otherwise, there are any specific issues relating to testing of the drug.

Timeline	Weeks
New drug already approved	4
Pharmacopoeial new drug	6
Other new drug	8

Source: pharmabiz.com



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## ▶ REGULATORY ROUND-UP

### 1. EMA offers new guideline for during COVID-19 trial



The European Medicines Agency (EMA) has discussed a new draft guideline on the methodological implications of undergoing trials for the corona virus disease (COVID-19).

Sponsors should consider on the improvements of the corona virus disease on methodological aspects of ongoing trials.



EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH

The EMA's biostatistics working party has said that to record deviations and related reasons and they have to pre-plan how deviation from the measures and individual decisions related to the COVID-19 pandemic are captured.

Currently, no new sites will be activated until 13 April, in this time the sponsor should gather sufficient amount of information on covid-19 and collect the information on trial patients in the study.

In some cases Data Monitoring Committee will be necessary to help sponsors to re-start trial operations and adjust the trial sample size and to deal with any potential sources.

Source: raps.org



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## ▶ REGULATORY ROUND-UP

### 2. European Commission announced delay MDR proposal

The European Commissioner for Health and Food Safety has said that the proposal of implementation of the Medical Devices Regulation (MDR) will be delay by one year as because of COVID-19.

There are some limitations (fewer resources are available) to ensure the implementation regulation.

The limitations are:

- The approval of clinical studies
- The designation and auditing of notified bodies and in manufacturing

The commissions are to maintain the current system and delay the implementation deadline of 26 May 2020 to allow the industry focus on the essential and urgent work of tackling COVID-19.

Source: raps.org





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## ▶ REGULATORY ROUND-UP

### 3. FDA import PPE and medical devices to fight against corona



The US Food and Drug Administration has reduced import requirements for certain products due to increase the availability of personal protective equipment (PPE) and other medical devices.

FDA has said that the entry information should send to the Customs and Border Protection (CBP). Importers should use the appropriate harmonized tariff schedule (HTS) code for the product. For emergency products such as diagnostics, masks and respirators can be use authorization.

Currently, there are 15 diagnostics with EUAs and National Institute for Occupational Safety and Health (NIOSH) has approved disposable respirators for emergency use. FDA has approved respirators from six countries, Australia, Brazil, Europe, Japan, South Korea and Mexico. Respirators may also qualify for import under the EUA and are authorized by regulators in Australia, Canada or Japan.

However, under EU authorization manufacturers and importers must first submit a request to FDA. Recently, FDA has also approved certain products, such as ventilators and remote monitoring devices.

Source: raps.org



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## ▶ REGULATORY ROUND-UP

### 4. DCGI clarification regarding unknowing fees submission



The Drugs Controller General of India (DCGI) has cleared to the manufacturer same fees can be used in case of unknowing submission of online applications for a specific division but submitted to other division of Central Drugs Standard Control Organization (CDSCO).



Centre for Development of Advanced Computing (C-DAC) has been requested to make proper system in Sugam Portal so that fees submitted in one division of CDSCO can be utilized by concerned division after declaration of such inadvertent submission.



**DCGI**

In 2016, online Sugam portal has been started for licensing and registration purpose and offer online services for drugs, cosmetics and biological and others.

Under new Medical Device Rules -2017 a separate medical device online portal has also been started for medical devices and in-vitro diagnostics (IVDs) applications.

Source: pharmabiz.com



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## ▶ MERGERS / ACQUISITIONS / COLLABORATIONS

### 1. CytomX and Astellas has joined to develop novel cancer therapy



CytomX Therapeutics and Astellas Pharma have collaborated for discovering, developing and commercialization of novel T-cell engaging bispecific antibodies for cancer treatment.

The novel T-cell binds with bispecific antibodies that target CD3 and tumor cell surface antigens for treating cancer.

According to the deal, CytomX's Probody therapeutic is playing a role in bispecific formats and CD3 modules for development of treatment targeting solid tumors. CytomX will receive an upfront payment of \$80 million and additional payments of up to \$1.6 billion for future preclinical, clinical and commercial product.

CytomX has two candidates in the pipeline. The lead candidate, CX-072 is bind with PD-L1 and developed as monotherapy in five oncology indications including triple negative breast cancer and the second candidate, CX-2009 in a phase II study as a treatment for hormone receptor (ER, PR) positive, HER2 negative breast cancer.

Source: nasdaq.com



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## ▶ MERGERS / ACQUISITIONS / COLLABORATIONS

### 2. Grifols collaborate with BARDA and FDA to test plasma therapy



**GRIFOLS**

Spanish healthcare company Grifols has joined with the Biomedical Advanced Research Development Authority (BARDA) and Food and Drug Administration (FDA), to evaluate the use of plasma therapy for covid-19.



Grifols will collect plasma from patients recovered from corona virus infection and processing it into a hyperimmune globulin. Plasma will support pre-clinical and clinical trials of hyperimmune globulin therapy for the treatment of covid-19. The company will provide viral inactivation technology to help transfusion of convalescent plasma as a potential treatment by allowing inactivated plasma units for therapeutic use.



Source: [pharmaceutical-technology.com](http://pharmaceutical-technology.com)



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## ▶ **MERGERS / ACQUISITIONS / COLLABORATIONS**

### **3. Takeda signed with Codexis for rare diseases**



Takeda Pharmaceutical has signed license agreement with Codexis for research and development for rare disorders.

According to the agreement, Codexis will use CodeEvolver protein engineering platform to develop gene sequences encoding proteins that could increase efficacy by improving activity, stability and cellular uptake.



Takeda is expertise in developing novel treatment with rare genetic disorders. Takeda will start pre-clinical and clinical development.

Codexis will receive an upfront payment, research and development (R&D) fee reimbursement. Takeda Pharmaceutical has planned to develop a drug to treat covid-19. They will develop a polyclonal hyperimmune globulin (H-IG).

Source: [pharmaceutical-technology.com](http://pharmaceutical-technology.com)



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## ▶ MERGERS / ACQUISITIONS / COLLABORATIONS

### 4. AstraZeneca and Silence Therapeutics to develop siRNA



AstraZeneca and Silence Therapeutics have planned to discover, develop and commercialize small interfering RNA (siRNA) therapeutics for the treatment of cardiovascular, renal, metabolic and respiratory diseases.



Silence has established siRNA platform to recognize liver-based targets, as an adjunct to developing new delivery approaches. Small interfering RNA (siRNA) are double-stranded RNA molecules, they act inside the cell to influence protein production.

AstraZeneca said that the targeted delivery to represents a new opportunity to treat cardiovascular, renal, metabolic and respiratory diseases.

Source: [pharmatimes.com/news](http://pharmatimes.com/news)



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## ▶ DRUGS: APPROVALS AND LAUNCHES

### 1. Mylab' test kit received CDSCO approval



Central Drugs Standard Control Organization (CDSCO) has approved Pune-based Mylab's test kit for COVID-19. This is India's first kit to receive commercial approval for covid-19 and it is named as Mylab Patho Detect COVID-19 Qualitative PCR kit.



Mylab's COVID-19 test kit screens and detects the infection within 2.5 hours as compared with over 7 hours taken by current tools.

The COVID- 19 kit has been created according to WHO guidelines, it is the great breakthrough for India, and the cost of this kit is nearly one fourth of the current procurement cost.

Source: [economictimes.indiatimes.com](http://economictimes.indiatimes.com)



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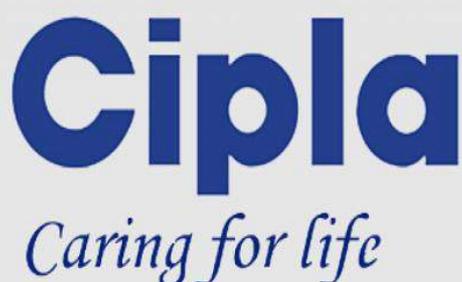
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## ▶ DRUGS: APPROVALS AND LAUNCHES

### 2. US FDA approved first 10 mg generic esomeprazole



The US Food and Drug Administration (FDA) has approved abbreviated New Drug Application (ANDA) for esomeprazole oral suspension for reducing ulcers.



Esomeprazole is the proton pump inhibitor for the treatment of gastroesophageal reflux disease (GERD), reduction of NSAID-associated gastric ulcer, to reduce the risk of duodenal ulcer recurrence and pathological hyper secretory conditions, consisting Zollinger-Ellison syndrome.

Cipla's esomeprazole oral suspension 10mg, 20mg and 40mg is generic equivalent version of AstraZeneca Pharmaceutical's Nexium, cipla is the first company to file for the 10mg of strength.

Source: [pharmabiz.com](http://pharmabiz.com)



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## ▶ DRUGS: APPROVALS AND LAUNCHES

### 3. First global approval of cabenuva in Canada



Health Canada has approved ViiV's cabenuva (cabotegravir/rilpivirine) and vocabria (cabotegravir) oral tablets for the treatment of HIV-1 infection in the combination form, this is the first global approval for the drug.

Patients who are treating with drug and combination they are virologically stable and suppressed and also living with HIV to maintain viral suppression while reducing their dosing schedule from 365 days to 12 days per year.

The approval of drug based on Phase III ATLAS and FLAIR studies, cabenuva was as effective as continuing their daily. A Forty eight week ATLAS and FLAIR study has published in "The New England Journal of Medicine" journal.

Source: [pharmatimes.com](http://pharmatimes.com)



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## ▶ DRUGS: APPROVALS AND LAUNCHES

### 4. USFDA approved actemra phase III trial for COVID-19



The US Food and Drug Administration (FDA) has approved Phase III clinical trial of Genentech's actemra (tocilizumab) for the treatment of adults with severe Covid-19 pneumonia.



Genentech is joining with the Biomedical Advanced Research and Development Authority (BARDA) and the trial will assess a combination of intravenous actemra and standard of care in hospitalized patients.

FDA has rapidly approved of this clinical trial to evaluate actemra in serious patients who are suffering from pneumonia and affected with the corona virus infection.

Genentech has also supplied 10,000 vials of the drug to the US Strategic National Stockpile for potential future use.

There are multiple independent studies that are currently being conducted worldwide to assess Actemra in patients with Covid-19 pneumonia.

Source: [pharmaceutical-technology.com](http://pharmaceutical-technology.com)



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## ▶ DRUGS: DEVELOPMENT & CLINICAL TRIALS

### 1. FDA approved epclusa to treat hepatitis C in children



The US Food and Drug Administration (FDA) has approved epclusa for the treatment of chronic hepatitis C infection (HCV) in children aged six years and above.

Epclusa is a pan-genotypic, protease inhibitor-free molecule. The drug is already approved by the US and European regulatory in 2016 to treat adults with hepatitis C infection.



Epclusa is the potential drug to help children who is suffering from HCV in the US. The approval is based on the review of results from a Phase II clinical trial in 175 children receiving epclusa for 12 weeks.

There are 173 patients showed a cure rate 93% in children aged 12 to <18 years and 100% in those with genotype 2, 3 and 6. In patients aged six to <12 years old, the SVR rate was 93% in those with genotype 1, 91% in genotype 3, and 100% in genotype 2 and genotype 4 HCV infection.

The drug safety profile in children aged six years and above was generally consistent.

Source: [pharmaceutical-technology.com](http://pharmaceutical-technology.com)



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## ▶ DRUGS: DEVELOPMENT & CLINICAL TRIALS

### 2. Clinical trials begin in New York for treatment of COVID-19



The United States has begun clinical trials for drug treatments against corona virus, The New York state has received 70,000 doses of hydroxychloroquine, 10,000 doses of zithromax and 750,000 doses of chloroquine.

Hydroxychloroquine and chloroquine, are a drug used to treat and prevent malaria, it could be a game changer. They hope for optimistic results of this clinical trial.

There were about 56% of all the cases in the United States are coming out of that metro area, and 60% of all the new cases are coming out of the metro New York area, and 31% of the people succumbing to this disease.

Source: [abcnews.go.com](http://abcnews.go.com)



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## ▶ DRUGS: DEVELOPMENT & CLINICAL TRIALS

### 3. First patient of COVID-19 treated outside US



Sanofi and Regeneron have said that first patient has been treated outside of the US by evaluating Kevzara (sarilumab) in severe COVID-19 patients. This is the phase II/III, multi-center, double-blind trials as part of the Kevzara COVID-19 programme.

Kevzara is a human monoclonal antibody that inhibits the interleukin-6 (IL-6) by binding and blocking the IL-6 receptor, IL-6 may play a role in an inflammatory response in the lungs of patients with COVID-19 infection.

Sanofi and Regeneron are working to rapidly initiate trials around the world that will help determine whether Kevzara has the potential to play a role in addressing the COVID-19.

This is phase II/III, randomized, double-blind, placebo-controlled trial with an adaptive design to evaluate the safety and efficacy of Kevzara in an approximately 300 adults hospitalized with serious complications from COVID-19. The trial will recruit hospitalized patients from several countries who are severe with COVID-19 infection.

Currently, kevzara (sarilumab) Injection is already approved for the treatment of severe rheumatoid arthritis that have not responded to or tolerated previous therapy.

Source: pharmabiz.com





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## ▶ DRUGS: DEVELOPMENT & CLINICAL TRIALS

### 4. Inovio got positive results from phase II trial of VGX-3100 to treat anal dysplasia

Inovio Pharmaceutical's candidate VGX-3100 has got positive results from an open-label, phase II study for the treatment of anal dysplasia in men and women.

Anal dysplasia is the precancerous condition caused by high-risk human papilloma virus (HPV), it is also known as high grade squamous intraepithelial lesion (HSIL). Anal dysplasia is an orphan disease that affects men and women in both immunocompetent and immunocompromised populations, without any adequate treatment it could convert in to anal cancer.

Currently, anal dysplasia is treated with surgical excision, electro-cautery or laser therapy, but up to 50% of those treated with these therapy experience disease recurrence within one year of treatment and 70% experience recurrence within three years.

This is an open-label, multi-center phase II trial to designed for evaluating the safety and efficacy of VGX-3100 in adults with precancerous anal dysplasia caused by HPV-16 and/or HPV-18.

Twenty three subjects were enrolled in the study who are human immunodeficiency virus (HIV) negative with histologically confirmed anal high-grade squamous intraepithelial lesion (HSIL) associated with human papilloma virus (HPV)-16 and HPV-18. One subject discontinued due to an unrelated adverse event. Twenty two received three doses of VGX-3100 administered.

The efficacy results show that VGX-3100 has the potential to enable the immune system to clear HPV 16/18 HSIL that cause precancerous anal dysplasia and are consistent with the results of our VGX-3100 phase 2b efficacy study in high-risk HPV-associated precancerous cervical dysplasia.

Source: pharmabiz.com



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## ▶ PATENTS: NEW APPROVALS / LITIGATIONS / SETTLEMENTS

### 1. Biocon and Mylan won patent litigation of Semglee in US



Biocon Ltd and its partner Mylan have won a litigation patent in the US court for invalidates a Sanofi patent on a device to deliver insulin glargine. Now, the companies can be commercializing their product Semglee in the world.



Sanofi had initiated a patent litigation against Biocon Ltd and Mylan in October 2017 for Semglee application in the New Jersey US court that consist of formulation patents as well as injection pen.

The US District Court has found that the device patent is not infringed and invalid for lack of written description. Biocon and Mylan's application for approval for the product is under review with US Food and Drug Administration, which has set June 2020 as a target date.

Source: livemint.com



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## ▶ PATENTS: NEW APPROVALS /LITIGATIONS /SETTLEMENTS

### 2. Ranitidine related lawsuits transfer in Florida



Federal judges have approved the transfer of 15 Zantac-related lawsuits to a South Florida court. Consumers have claimed that the batches of the popular heartburn relief medication are contaminated and caused cancer in users. Judges have allowed potentially thousands of additional Zantac-related lawsuits to join the litigation.

This associated cases known as multidistrict litigation (MDL). The U.S. Food and Drug Administration has confirmed the presence of trace amounts of a potential cancer-causing chemical N-nitrosodimethylamine (NDMA) in Zantac and its generic ranitidine.

Then after consumers has begun filing lawsuits against international drug companies including Sanofi, Boehringer Ingelheim Pharmaceuticals and Pfizer.

All legal proceedings for the MDL will take place in the U.S. District Court for the Southern District of Florida.

Source: [drugwatch.com](http://drugwatch.com)



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### 3. Bayer agreed draft settlement for Roundup weed killer



Bayer AG has agreed on draft settlement with half a dozen law firms that represent tens of thousands of litigation on Roundup weed killer that causes cancer.

The company had said last month it was in no rush to reach terms with lawyers and was less support to set aside funds for any deal following recent U.S. decisions in its favor.

The company had also said the prediction settlement worth about US\$10 billion, the company would not have to write down the US\$63 billion Monsanto acquisition.

Source: [channelnewsasia.com](http://channelnewsasia.com)



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## ▶ PATENTS: NEW APPROVALS / LITIGATIONS / SETTLEMENTS

### 4. Amarin loses legal fight of vascepa



Federal judge has ruled that key patents covering Amarin's heart drug vascepa were invalid. Amarin disagrees with the ruling and will chase all available remedies to prevent launch of generic versions of vascepa in the U.S.

Amarin shares were down 60%. Most Wall Street analysts who had been following the vascepa patent litigation trial since it started in January had been predicting a ruling in Amarin's favor.

The judge said that the generic versions of vascepa would infringe on claims included in Amarin's patents, those claims were obvious and therefore invalid.

The drug vascepa is derived from fish oil that is commercial blockbuster for Amarin, vascepa sales rose 87% to \$430 million in 2019, driven by the positive cardiovascular benefit demonstrated in a large outcomes study, but this adverse patent ruling is a stinging blow to Amarin

Source: statnews.com



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## ▶ TECHNOLOGY / NDDS

### 1. University of Minnesota design mechanical ventilator



A team from the University of Minnesota has developed a mechanical ventilator. This device is inexpensive, easy to obtain material and does not require pressurized oxygen.

The device consists of a frame and mechanical actuator that compresses a traditional ambulatory ventilation bag, which is connected to the patient's endotracheal tube and is used to pump either external compressed oxygen or ambient air.



The size of this device is like a cereal box and the frame itself metal stamped, 3D printed, or made with modified consumer goods. The reason is to design mechanical ventilator is to COVID-19 because of the biggest concerns is the potential shortage of ventilators for patients.

Source: medgadget.com



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## ▶ TECHNOLOGY / NDDS

### 2. Researchers developed highly sensitive strain sensor



The researchers from KAIST institute of technology have developed a strain sensing technology that can accurately measure the flexion of joints and detecting the optical transmittance of a novel material.

The sensor consists of Ecoflex that is used in the motion picture to make masks, wounds that look like human tissues, and it adheres to the skin.

A platinum-catalyzed silicone that is optically translucent, that has a forest of carbon nano tubes throughout its body because of combination material is bent, tiny cracks run through it, by using shining a light beam through the material. The researchers were able to getting ten times greater sensitivity than existing optically-based stretchable strain sensors, and with a dynamic range of 0% to 400%.

The sensor was able to accurately detect the bending of a finger, movement of the carotid artery under the skin, and the movement of muscles around the mouth while talking.

Source: medgadget.com



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## ▶ TECHNOLOGY / NDDS

### 3. KAIST institute developed washable face masks



Engineers from the KAIST institute have developed washable filter material that can be used within face masks and can be used at least twenty times after wash without losing its ability to trap fine dust particles.

The material has designed appropriately for face masks with sturdy frames, the entire device maintain its original shape through the washes. The mask can filter up to 80% of 600 nanometer-wide particles even after 4,000 bends.

Once the mask losing its filtration qualities, then after filter material can be swapped out for a new sheet without having to throw out the rest of the mask.

The mask has been made up of nanofibers with a 100 to 500 nanometers diameter that are arranged perpendicularly to each other and creates a fine mesh that lets air through while blocking very fine particles. The material is highly water resistant and quickly dry.

Source: [medgadget.com](http://medgadget.com)



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## ▶ TECHNOLOGY / NDDS

### 4. POCUS: key screening tool for COVID-19 patients



In between this COVID-19 critical situations point-of-care ultrasound (POCUS) can be considered as the key screening tool, who are involved in saving lives.

POCUS is quick, precise and scalable diagnostic tracking tool for medically fragile patients. It can be identify several lung pathologies like pneumonia or lung consolidation and it can be used for the cardiac evaluation or to check the fluid responsiveness in the serious patients.

The patients affected with COVID-19 who needs airway management under ultrasound guidance (to administer essential fluids & medications) where POCUS plays a vital role in clinical evaluation process.

POCUS has also offered several advantages over X-ray or CT scan such as zero radiation exposure to the patients.

It is easy to disinfect the compact ultrasound system (apply sterile transducer cover) and easy to handle, does not require moving the patient from the isolation ward.

Source: [economictimes.indiatimes.com](http://economictimes.indiatimes.com)



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