

## How has technology improved healthcare?

The health care industry has been **relatively** slow to **adopt** new technologies in comparison to other industries. Due to strict **regulations** and the **sensitive** nature of medical information, the industry has proceeded with **caution**. Nevertheless, the field has made significant **strides** that have **redefined** the way in which **physicians** practice medicine and patients receive **treatment**.

Here are a few examples of how technology has improved healthcare:

### 1. Increased connectivity among physicians.

Digital **platforms** have **redefined** the social **sphere**, and new technology has made it easier than ever for **physicians** to connect with one another in order to share information. New apps have reached the market that allow **physicians** to post recent findings and **initiate** conversations on their mobile devices, which reduces the amount of time needed to get in touch with **colleagues**.

### 2. Smartphone-based devices offer readings, aid in the delivery of care.

Another major development is the ability of smartphone-based devices to monitor your blood sugar level and your heart rate. **Companion** devices go one step further and actually deliver care to patients. For instance, the MiniMed 670G can recognize when people with Type 1 **diabetes** need **insulin** and then administer the proper amount of medication **automatically**.

### 3. Computers provide input on medical decisions.

As computers become more **sophisticated**, they are quickly becoming a **valuable** aid to health care professionals. Computers can now offer input on X-rays and similar **diagnostics** to help **physicians** make more **timely** and **informed** decisions. The same is true when it comes to developing new drugs and determining the best **route** for treating patients. Machines gather and analyze data in real time, providing a second-opinion to health care professionals.

### 4. New utility for 3D printing.

While the **advent** of 3D printing has impacted multiple markets, it has been particularly **beneficial** to the health care sector. For a low price, **physicians** can print out **synthetic** skin, **implants**, and **prosthetics**. They can also create realistic models to practice procedures.

### 5. Greater access to DNA sequencing.

In 2003, researchers sequenced the human **genome** for the first time. The process, which lasted 13 years, cost nearly \$3 billion to complete. Developments in technology have since reduced the cost to a mere \$1,000. The data found in DNA is now more accessible to **physicians** and **patients**. Sequencing platforms continue to advance and open new doors.

## 6. Remote health exams.

The concept behind the health check chair is simple: an in-home chair reads all of a patient's basic **vital signs** and **transmits** the data to a **physician**. The chair makes it possible for **patients** to **obtain** regular, basic **checkups** without leaving the comfort of their homes. As developers find new ways to produce this equipment in more **cost-effective** ways, the technology will likely become more **mainstream**.

## 7. Pharmaceutical firms have more access to data to improve their products.

**Pharmaceutical** companies are gaining access to more resources to inform their product development decisions. The way in which these organizations decide to **utilize** this information will depend in part on how they **generate** income.

Some businesses have begun to charge customers for drugs based on effectiveness rather than usage. Not all pharmaceutical companies will **adopt** this approach — at least not right away — but as more do, they will have the ability to improve the quality of their **output**.

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## 8. More online and mobile educational opportunities.

**Aspiring** health care professionals, particularly nurses, are finding it easier to **pursue** their education by taking courses online. Remote access to medical training has also made it easier for **physicians** to learn and expand their skill set in more **isolated** areas of the world. The increased ability to access education in formerly **secluded regions** of the world **equates** to more health care opportunities for people who truly need them.

## 9. Reduced risk and recovery time.

Technological advancements have improved the safety of medical procedures. Due to technological **innovations** such as laser treatments, medical procedures are now less **invasive** and pose fewer risks. What's more, the use of new technology has **significantly** reduced recovery time, in some case from several weeks down to a couple of days.

## 10. Advancements in robotics and nanotechnology.

Besides laser technology, other recent developments include surgical robots and **nano**-devices. Through the use of these tools, **physicians** have been able to increase their **accuracy** and gain entry to **formerly inaccessible** areas. One **nano**-robot, for example, can actually swim through fluids in the body, including the bloodstream and the surface of the eye.

## Vocabulary bank:

**relative** - *adj.* not absolute or complete; properly related in size or degree or other measurable characteristics; usually followed by 'to'; *noun* an animal or plant that bears a relationship to another (as related by common descent or by membership in the same genus); a person related by blood or marriage

**adopt** - *verb* take into one's family; take up and practice as one's own; choose and follow; as of theories, ideas, policies, strategies or plans; take on a certain form, attribute, or aspect; take up the cause, ideology, practice, method, of someone and use it as one's own; put into dramatic form; take on titles, offices, duties, responsibilities

**regulation** - *adj.* prescribed by or according to regulation; *noun* the act of controlling or directing according to rule; the act of bringing to uniformity; making regular; an authoritative rule; (embryology) the ability of an early embryo to continue normal development after its structure has been somehow damaged or altered; the state of being controlled or governed; a principle or condition that customarily governs behavior

**sensitive** - *adj.* of or pertaining to classified information or matters affecting national security; hurting; responsive to physical stimuli; being susceptible to the attitudes, feelings, or circumstances of others; able to feel or perceive; *noun* someone who serves as an intermediary between the living and the dead

**caution** - *noun* the trait of being cautious; being attentive to possible danger; judiciousness in avoiding harm or danger; a warning against certain acts; the trait of being circumspect and prudent; *verb* warn strongly; put on guard

**stride** - *noun* significant progress (especially in the phrase "make strides"); a step in walking or running; the distance covered by a step; *verb* cover or traverse by taking long steps; walk with long steps

**redefine** - *verb* give a new or different definition of (a word); give a new or different definition to

**physician** - *noun* a licensed medical practitioner

**treatment** - *noun* care by procedures or applications that are intended to relieve illness or injury; the management of someone or something; a manner of dealing with something artistically; an extended communication (often interactive) dealing with some particular topic

**connectivity** - *noun* the property of being connected or the degree to which something has connections

**platform** - *noun* a raised horizontal surface; any military structure or vehicle bearing weapons; the combination of a particular computer and a particular operating system; a document stating the aims and principles of a political party; a woman's shoe with a very high thick sole

**sphere** - *noun* any spherically shaped artifact; the geographical area in which one nation is very influential; a three-dimensional closed surface such that every point on the surface is equidistant from the center; a solid figure bounded by a spherical surface (including the space it encloses); a particular environment or walk of life; a particular aspect of life or activity; the apparent surface of the imaginary sphere on which celestial bodies appear to be projected

**initiate** - *noun* people who have been introduced to the mysteries of some field or activity; someone who has been admitted to membership in a scholarly field; someone new to a field or activity; *verb* take the lead or initiative in; participate in the development of; accept young people into society, usually with some rite; prepare the way for; bring up a topic for discussion; bring into being

**colleague** - *noun* a person who is member of your class or profession; an associate you work with

**Companion** - *noun* one paid to accompany or assist or live with another; a person who is frequently in the company of another; a traveler who accompanies you; *verb* be a companion to somebody

**diabetes** - *noun* any of several metabolic disorders marked by excessive urination and persistent thirst

**insulin** - *noun* hormone secreted by the isles of Langerhans in the pancreas; regulates storage of glycogen in the liver and accelerates oxidation of sugar in cells

**automatic** - *adj.* operating with minimal human intervention; independent of external control; like the unthinking functioning of a machine; without volition or conscious control; *noun* a pistol that will keep firing until the ammunition is gone or the trigger is released; light machine gun

**sophisticated** - *adj.* intellectually appealing; having or appealing to those having worldly knowledge and refinement and savoir-faire; ahead in development; complex or intricate

**valuable** - *adj.* having great material or monetary value especially for use or exchange; having worth or merit or value; *noun* something of value

**diagnostic** - *adj.* characteristic or indicative of e.g. a disease; concerned with diagnosis; used for furthering diagnosis

**timely** - *adj.* done or happening at the appropriate or proper time; before a time limit expires; *adv.* at an opportune time

**informed** - *adj.* having much knowledge or education

**route** - *noun* an open way (generally public) for travel or transportation; an established line of travel or access; *verb* divert in a specified direction; send via a specific route; send documents or materials to appropriate destinations

**advent** - *noun* arrival that has been awaited (especially of something momentous); the season including the four Sundays preceding Christmas; (Christian theology) the reappearance of Jesus as judge for the Last Judgment

**beneficial** - *adj.* promoting or enhancing well-being; tending to promote physical well-being; beneficial to health

**synthetic** - *adj.* of a proposition whose truth value is determined by observation or facts; systematic combining of root and modifying elements into single words; involving or of the nature of synthesis (combining separate elements to form a coherent whole) as opposed to analysis; not genuine or natural; artificial as if portrayed in a film; not of natural origin; prepared or made artificially; *noun* a compound made artificially by chemical reactions

**implant** - *noun* a prosthesis placed permanently in tissue; *verb* become attached to and embedded in the uterus; fix or set securely or deeply; put firmly in the mind

**prosthetic** - *adj.* relating to or serving as a prosthesis; of or relating to prosthetics

**genome** - *noun* the ordering of genes in a haploid set of chromosomes of a particular organism; the full DNA sequence of an organism

**patient** - *adj.* enduring without protest or complaint; enduring trying circumstances with even temper or characterized by such

endurance; *noun* a person who requires medical care; the semantic role of an entity that is not the agent but is directly involved in or affected by the happening denoted by the verb in the clause

**vital** - *adj.* manifesting or characteristic of life; performing an essential function in the living body; full of spirit; urgently needed; absolutely necessary

**transmit** - *verb* send from one person or place to another; broadcast over the airwaves, as in radio or television; transmit or serve as the medium for transmission; transfer to another

**obtain** - *verb* come into possession of; receive a specified treatment (abstract); be valid, applicable, or true

**checkup** - *noun* a thorough physical examination; includes a variety of tests depending on the age and sex and health of the person

**cost-effective** - *adj.* productive relative to the cost

**mainstream** - *noun* the prevailing current of thought

**Pharmaceutical** - *adj.* of or relating to pharmacy or pharmacists; of or relating to drugs used in medical treatment; *noun* drug or medicine that is prepared or dispensed in pharmacies and used in medical treatment

**utilize** - *verb* convert (from an investment trust to a unit trust); put into service; make work or employ (something) for a particular purpose or for its inherent or natural purpose

**generate** - *verb* bring into existence; produce (energy); make children; give or supply

**output** - *noun* production of a certain amount; what is produced in a given time period; the quantity of something (as a commodity) that is created (usually within a given period of time); final product; the things produced; signal that comes out of an electronic system; *verb* to create or manufacture a specific amount

**Aspiring** - *adj.* desiring or striving for recognition or advancement

**pursue** - *verb* follow in or as if in pursuit; carry further or advance; go in search of or hunt for; carry out or participate in an activity; be involved in

**isolate** - *verb* place or set apart; obtain in pure form; separate (experiences) from the emotions relating to them; set apart from others

**secluded** - *adj.* providing privacy or seclusion; hidden from general view or use

**region** - *noun* the extended spatial location of something; a large indefinite location on the surface of the Earth; the approximate amount of something (usually used prepositionally as in 'in the region of'); a part of an animal that has a special function or is supplied by a given artery or nerve; a knowledge domain that you are interested in or are communicating about

**equate** - *verb* be equivalent or parallel, in mathematics; make equal, uniform, corresponding, or matching; consider or describe as similar, equal, or analogous

**innovation** - *noun* the act of starting something for the first time; introducing something new; a creation (a new device or process) resulting from study and experimentation; the creation of something in the mind

**invasive** - *adj.* marked by a tendency to spread especially into healthy tissue; relating to a technique in which the body is entered by puncture or incision; gradually intrusive without right or permission; involving invasion or aggressive attack

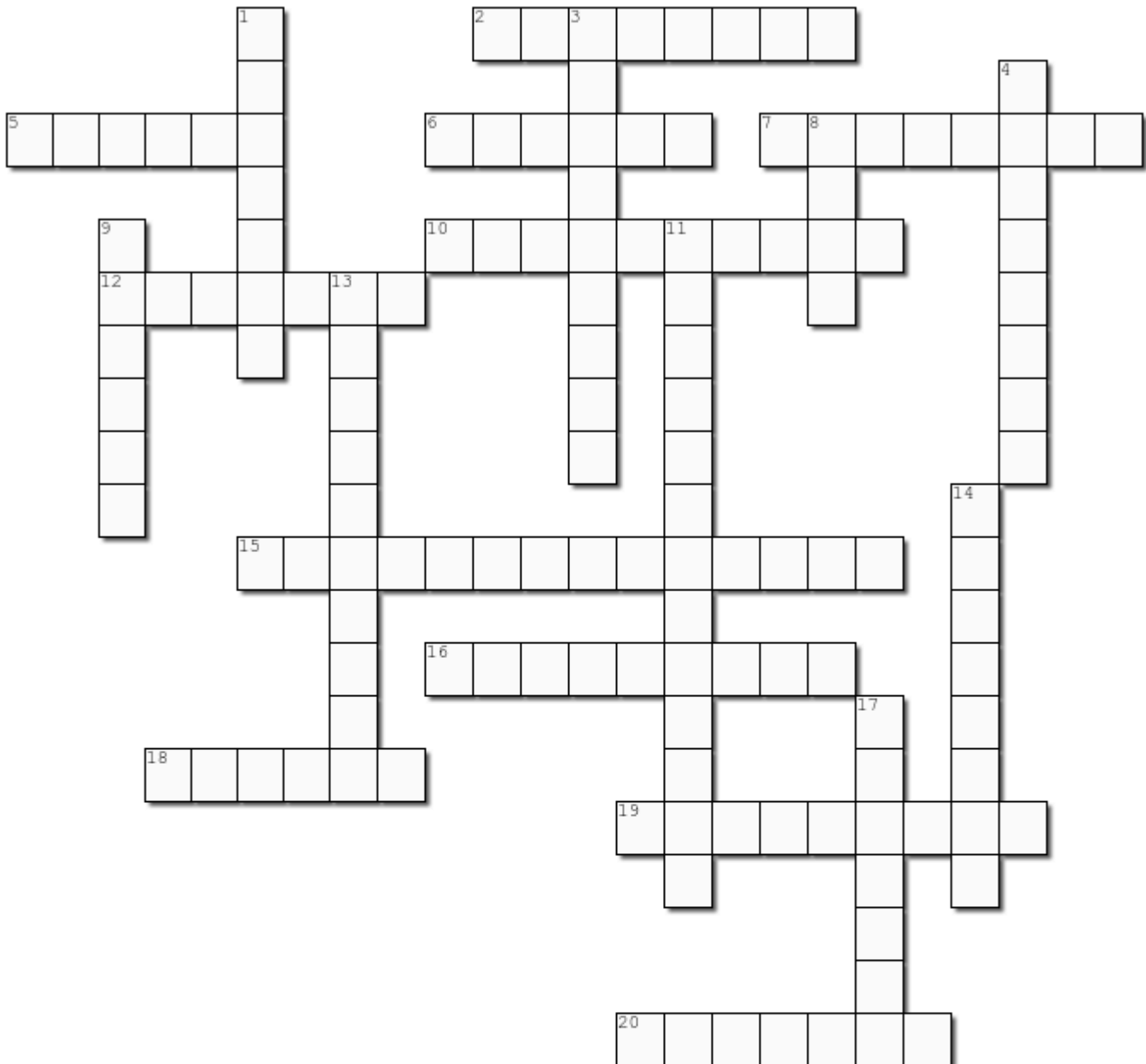
**nano** - extremely small

**accuracy** - *noun* the quality of being near to the true value; (mathematics) the number of significant figures given in a number

**former** - *adj.* referring to the first of two things or persons mentioned (or the earlier one or ones of several); (used especially of persons) of the immediate past; belonging to the distant past; belonging to some prior time; *noun* the first of two or the first mentioned of two

**inaccessible** - *adj.* capable of being reached only with great difficulty or not at all; not capable of being obtained

Name: \_\_\_\_\_



Created using the Crossword Maker on TheTeachersCorner.net

### **Across**

- 2. hidden away, usually unseen, far away.
- 5. equal to
- 6. something that used to be
- 7. to begin
- 10. heart rate, blood pressure, breathing, etc
- 12. used in the treatment of diabetes
- 15. related to medicines
- 16. doctor
- 18. the beginning of something
- 19. potentially dangerous/private information
- 20. to keep separate from everything

### **Down**

- 1. basic medical check
- 3. assistant, friend, helper
- 4. important, useful
- 8. extremely small
- 9. done in an effective time
- 11. advanced
- 13. new idea
- 14. comparative
- 17. somebody waiting to be treated

## Synonyms:

<u>Vocabulary word</u>	<u>Synonym</u>	<u>Definition</u>
adopt		Take on/assume
	Warning	
	Separate	keep alone
		Nobody can get to it
innovation		
pursue		
	Good/helpful	
	Friend/Helper	
		Change the meaning of
	Order	To keep safe and stable
	insert	

## Guess the word!

### adjective

- responsive to

quick to respond to

sensitized to

reactive to

sentient of

aware of

conscious of

alive to

susceptible to

easily affected by
- tactful

careful

thoughtful

diplomatic

delicate

subtle

finely tuned

kid-glove

sympathetic

compassionate

understanding

empathetic

### verb

- make use of
- put to use
- use
- employ
- avail oneself of
- have recourse to
- resort to
- look to
- bring into service
- press into service
- take advantage of

adjective

opportune

well timed

at the right time

prompt

punctual

convenient

appropriate

suitable

apt

fitting

expedient

felicitous

seasonable

Name: \_\_\_\_\_










Write the letter of the correct match next to each problem.

Created on TheTeachersCorner.net Match-up Maker

1.	_____	relative	a. licensed medical practitioner
2.	_____	adopt	b. a particular environment or walk of life
3.	_____	regulation	c. classified information
4.	_____	sensitive	d. bring into being
5.	_____	caution	e. properly related in size or degree or other measurable characteristic
6.	_____	stride	f. take up and practice as one's own
7.	_____	redefin	g. the combination of a particular computer and a particular operating system
8.	_____	physician	h. noun the act of controlling or directing according to rule
9.	_____	treatment	i. give a new or different definition
10.	_____	connectivity	j. a warning against certain acts
11.	_____	platform	k. significant progress
12.	_____	sphere	l. noun the property of being connected or the degree to which something has connections
13.	_____	initiate	m. the management of someone or something

Play Kahoot:

<https://play.kahoot.it/v2/?quizId=09028111-4d43-41f2-ba9b-373d76e4069a>

1 - Quiz Technology in healthcare has advanced the most in the 21st century.	 30 sec
2 - Quiz Saving time is a disadvantage of technology in healthcare	 30 sec
3 - Quiz Healthcare records need to be safe and secure	 30 sec
4 - Quiz Which health act has established guidelines to protect computerized patient information	 30 sec
5 - Quiz What is an example of technology used in diagnostics	 30 sec
6 - Quiz tele-health is defined as using technology to facilitate long distance health care	 30 sec
7 - Quiz Cost is NOT a downfall of integrating Tele-healthcare	 30 sec
8 - Quiz What is the biggest benefit of Technology in Healthcare?	 30 sec
9 - Quiz During Robotic surgery, the doctor is located at a console away from the patient.	 30 sec