



# Medicine in Television Series

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# CSI and Forensic Medicine

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*A successful model for TV franchising, this CBS series about a state-of-the-science forensics team who can solve even the most complex cases in a matter of minutes has opened franchises in three different cities, as well as a new division on IT crime called Cyber. The original fiction, which went to air in 2000 starring the now legendary Gil Grissom as Head of the Las Vegas CSI Unit, shut up shop in 2015 after 15 straight seasons and a total of 337 episodes. Its Miami and New York spin-offs, first screened with notable success in 2002 and 2004 respectively, wound up ten years later. Cyber, which is still on air at the time of writing, every week attracts an average of ten million viewers.*

Crime Scene Investigation (better known as CSI or CSI: Las Vegas) is a US TV series created by Anthony E. Zuiker and produced by Jerry Bruckheimer, which premiered in October 2000 on the CBS network, winding up after 15 seasons, in 2015. The last episode was feature-length, screened in the US on 27 September 2015. CSI was a television success in the opening decade of this century, with a worldwide audience of over 73.8 million viewers in 2009. In 2012, it was recognized as the most-viewed TV series in the world for the fifth year running, since CSI has been screened in over 200 countries. Even so, in the Emmy Awards it only reaped three trophies in technical categories. It premiered in Spain in 2002 and its early seasons were hugely successful, gaining average audience shares above 25%. It ran free-to-view on Telecinco and Cuatro, among other channels.

Such success allowed it to become a franchise that spawned three offspring: CSI: Miami (2002–2012), CSI: NY (2004–2013) and CSI: Cyber (on air since 2014). The structure of all three CSI series set in cities is very much alike: investigate the scene of the crime live, gather evidence and solve the mystery, though each uses different characters. The original series is set in the US city of Las Vegas (Nevada) and centers on the

work of a team of forensic scientists and criminologists who belong to the city's police department and investigate some of the crimes occurring there. The team is trained to solve each case through the gathering and analysis of evidence at the scene of the crime, seeking the guilty and interrogating witnesses and suspects. They work around the clock until they resolve the situation. Each episode has a main plot related to a violent crime and a subplot that affects the investigators. The crime or felony is almost always solved in a single episode.

## **The keys to success of the forensic scientists**

According to the experts, the original series and its franchises owe their success to blending crime fiction and medical or scientific genres, as well as their style of filming. In terms of the former, the highlight is on the preciseness and detail in the gathering and analysis of the evidence, taking the perspective of a forensic autopsy, the use of fast, sophisticated technology to conduct analyses, including genetics and toxicology, and the investigators' scientific knowledge.

In its day, CSI used an innovative method of filming, using many special effects, plus original

use of color and light. Furthermore, it is filmed on 35-mm cameras, typically used in cinema movies. The storylines tend to happen at night, the cutting is frenetic, the action changes quickly between interiors and exteriors while the aesthetic in certain scenes resembles a video clip. The initial hypothesis of the facts and their resolution are presented as a flashback, either in black and white or sepia.

Due to its popularity, it has received several criticisms both for its degree of graphic violence and sexual content as well as for the rather unrealistic image of the procedure for solving a crime. It has been accused of being thoroughly excessive in its violence. It does not shy from clearly showing the injuries victims suffer (always with plenty of blood), nor does it avoid decomposing flesh riddled with revealing insects. During the necropsy, cadavers are clearly shown with their entrails on view. They carry out simulations of blows, reconstructions of the identity of the guilty, and each meticulous detail in the lab analysis of the evidence is always shown. One of the most original aspects of the series since it began is the use of enlargements and micro-cameras to show wounds in the greatest detail, reveal a bullet's trajectory, or explore injuries or the inside of organs.

### Applying the CSI method

The scripts of CSI and its franchises are highly similar. It starts with the presentation of the crime or felony before the opening credits. Then the CSI investigators arrive to make a highly detailed visual inspection of the corpse and the crime scene. They review the victim in detail, photograph the scene and carefully gather the evidence. This task is shown with great thoroughness. At this point, witnesses and possible perpetrators are also interrogated while the first arrests are made, if deemed necessary. The investigators discuss the murder details and form their early (normally mistaken) hypotheses regarding events, either at that moment or after the initial analysis of evidence.

The work continues in the forensics lab, where they analyze the evidence using technologically advanced methods. These include finger-print-

ing, analysis of biological or material remains, ballistics, insect recognition, DNA analysis and detection of poisons and medication. All this develops at a frenetic pace and the results obtained almost immediately. The investigators consult the forensic pathologist and discuss the autopsy results in detail. They scour databases to identify the case, the suspects involved or others who may be related to the case in some way. The work progresses with further questioning and the analysis of new evidence, some from subsequent murders or fresh crimes related to the case. More clues are revealed, or where there is a new clue, a fresh analysis is made. The suspects may be questioned again, new evidence is found or the old reviewed, and the final (correct) hypothesis is formulated. The case is solved by unveiling and grilling the perpetrator.

### CSI in opposition to reality

Despite the fact the show's producers consider it realistic, CSI is nothing more than fiction. There are vast differences between the on-screen story and the reality of police and forensic investigation. To start with, on CSI it seems like all the team members are able to take part in all phases of the investigation. They travel to the crime scene, process the scene, gather evidence, interrogate witnesses or suspects, analyze evidence and almost always operate in the streets or in buildings to arrest the criminal. It is unusual in that they are armed and use their guns if the situation so requires. In the final instance, they solve the crime. They all seem to be experts, though it is true that some of the technicians only work in the lab, some police do not do biological work and the forensic pathologist only conducts autopsies.

The reality of criminal investigation and forensic medicine in every country is quite different. In fact, there is a clear separation between judicial police, who investigate and arrest the accused, scientific police, who gather and analyze evidence, and forensic scientists, who work in institutes for legal medicine. Each concentrates on their own specialization, without trespassing into any other professional areas. In Spain, the forensic analyst does not form part of the investigative



team. He or she is a technician who only states her or his findings before the judge. The most surprising aspect is the role of the CSI characters in questioning and in arrests –clearly an exaggeration, more in the realm of fiction than truth.

The characters in the CSI team appear to be scientists, or at any rate, police officers who apply scientific methods to solve cases. They use science, logic and deduction instead of firearms. Evidence is the most important factor, and it is always conclusive, in contrast to the interrogations. This is obvious in their attitude: the people interrogated lie whereas the evidence is absolute. At the crime scene, they dress characteristically, identified by their team jackets. At the police station and crime lab, they wear lab coats and are surrounded by analysis apparatuses and computers. The laboratory is dark and crowded with equipment, flasks, precipitate beakers, test tubes containing mysterious liquids and high-technology microscopes. The actors are seen handling samples, transferring liquids with pipettes and placing vials into an analyzer. They review the results and reach pertinent conclusions. They all seem to have the skills of lab researchers and use scientific and medical jargon with ease. The reality is quite different, as the arguments given above show.

Both the gathering of evidence and samples, as well as their processing and laboratory analysis are done using very advanced technology. A suitable apparatus for determining a result is never lacking, the equipment is all ultra-modern and –even more significantly and startlingly– the results arrive lightning fast. This situation is valid whether consulting identity databases, processing and detecting fingerprints, or analyzing toxicology or genetic DNA evidence. It seems as if the entire staff and technology are at the service of the case in hand. There are no delays, breakdowns, queues or waiting around. Everything comes out at the first try with no need for a repeat. The episodes do not show the time or preparatory procedures that analysis requires, or the time required to extract samples, which is always much slower. Everything is very easy: the sample is placed in the suitable apparatus and the required result immediately obtained. In the series, all the crimes are solved within hours or a few days.

Naturally this contrasts with reality, with restrictions on equipment, staff and techniques, even in countries such as the US. Many techniques cannot be applied, and in others, the results may be delayed for months or even years. Science requires patience: it is tiresome and takes time. The means are all too often insufficient for the need.

Fiction forces cases to be flashy and complex, to stimulate interest and last the length of each episode's storyline. In the early seasons, several cases were often investigated simultaneously in a single episode, but recent seasons have about one case per episode. The crimes are often based on real cases, but they are presented more realistically or are clearly exotic. An analysis of the first season revealed a total of 74 cases investigated in 23 episodes. Most corresponded to violent crime (72%), especially murders (64%), robberies, rapes, suicides, kidnappings, blackmail and accidents. Most of the detainees were male (77%) and white (87%). The victims were mainly male (66%) and Caucasian (91%). The crime was committed mainly using firearms (36%) and knives or other cutting instruments (17%). In fact, most investigations are routine and it is uncommon for a police officer to frequently investigate such spectacular or complex cases.

The series reinforces the perception that criminals always leave sufficient clues to enable a crime to be solved, which occurs in most cases. Despite continuous advances in forensic science, situations exist where there is simply insufficient evidence to solve the case, or the proof available does not help solve it. It seems that officials responsible for ensuring the law is obeyed and forensic analysts are always one step ahead of the criminals, which often is clearly not true.

### The CSI effect

One of the greatest problems the series brought to light were the high expectations created among people in real life. Watching the series, one would believe that crimes can be solved in two hours, data processed in minutes and that forensic laboratories are crammed with high-tech equipment fitted with lasers to do all the work for you. The truth is that processes are long and te-

dious, though that does not make them any less important.

The CSI effect, sometimes called “CSI syndrome”, refers to the various ways that the exaggerated representation of forensic science in CSI and other TV programs influences public perception of criminology. The advanced techniques shown in these series heighten expectations of judges, juries and criminals on trial, regarding the evidence found at a crime scene. The term is employed in the US for the demand by juries for more forensic evidence in criminal trials so as to make sounder decisions. The same phenomenon is applied to defense lawyers, who request a greater amount of incriminating evidence. And the same happens with the police: demand for proof has likewise increased. The truth is that in most cases, this simply overloads crime and forensic medicine labs with work.

The success of CSI and other similar series increased viewers' interest in forensic medicine and the number of enrollments in courses on the subject. In Spain, reliable data does not exist of its influence on enrollment in the Degree in Criminology many universities offer. However, as occurs with all popular series, it is likely that it stimulates interest in the subject and so more people choose it as a vocation. Nevertheless, the confusion between criminology and forensic science can lead to the frustration of expectations from those starting to study the former without knowing what, in fact, it is.

One of the negative effects of CSI and similar series is that criminals can learn from them and, as a result, better prepare their actions and carry them out in more detail to leave as little incriminating proof as possible at the crime scene. The result is greater difficulty for investigators attempting to solve cases.

In the end, it is more important to be able to distinguish between reality and fiction, between what is a police investigation and forensic medicine, compared to what is TV fiction. The latter aims to depict reality in an amusing way, lead-

ing it to exaggerate situations so as to entertain and consolidate its audience. If, furthermore, one learns something, even better. Reality tends to be more routine, slower and more boring, though as the saying goes, “sometimes, truth is stranger than fiction”.

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