

Application and Innovation of Electronic Monitoring in Chinese Criminal Justice

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ABSTRACT--- *In the field of criminal justice, electronic monitoring technology has experienced the development of four generations of technology: fixed telephone, radio frequency tag, Global Positioning System, and biometrics. Today, Chinese criminal justice practice adopts a monitoring method based on cell phone positioning, supplemented by electronic anklets. The "Non-custodial Code monitoring system" is an innovative achievement of Hangzhou, China's judicial personnel on electronic monitoring, which has achieved good practical results and will be promoted nationwide. As an effective criminal measure, electronic monitoring reduces the number of detainees in prison, eases the supervision pressure on judicial personnel, reduces financial expenditures, and helps criminals rejoin society. Due to the lack of detailed legal provisions, the application of electronic monitoring in practice lacks specificity, and there is the possibility of violating the privacy of citizens. So electronic monitoring in China's criminal justice presents such a situation. On the one hand, the law clearly states that electronic monitoring can be applied only during the community correctional stage and the period of residential confinement. On the other hand, judicial officers actively try to apply electronic monitoring to the bail process. It is foreseeable that electronic monitoring will be widely promoted in the process of China's criminal justice reform. This process should adhere to the principles of legality, necessity, and judicial review.*

Keyword--- Electronic Monitoring, Community Correctional, Residential Confinement, Chinese Criminal Justice

1. THE DEVELOPMENT OF ELECTRONIC MONITORING TECHNOLOGY

Electronic monitoring technology enables judicial and administrative agencies to monitor suspects' or criminals' location, actions, and status in a real-time, accurate, and continuous manner (Nellis, 2015, P.10). The time and space of the suspects' or criminals' activities are restricted to a certain range. Some scholars believe that electronic monitoring has undergone four generations of changes based on different technologies (Liu, Renwen, 2007).

A. The First Generation of Electronic Monitoring Technology: Fixed Telephone Monitoring

There are four types of Monitoring of the monitored person via fixed telephone (Wu Jingqin, 2005). Firstly, telephone confirmation is to judge whether the monitored person is at the monitoring location by how the monitor calls the monitored person. The advantage of phone confirmation is that the monitored person's location is confirmed by calling, which saves the time and cost of the monitor to the monitoring location. However, the disadvantage is that when no one answers the phone, the monitoring personnel must still confirm the monitoring location. Secondly, based on telephone confirmation, the monitoring agency extracts the monitored person's voice as a sample in advance. Then, in the monitoring process, by detecting whether the sonic and the sample match, determine whether the monitored person answers the phone. Sonic Confirmation solves the problem of replacing the monitored person with someone else to answer the phone. However, the disadvantage of this method is that when the monitored person is sick or unwell and the voice changes, the monitoring personnel cannot accurately judge. The third way is video confirmation. It is also based on phone confirmation, and a video monitor is installed on the phone.

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Then, when the monitoring personnel makes a phone confirmation, they can observe through the video monitor whether the monitored person is at home. Video confirmation uses two confirmation methods at the same time to ensure the monitoring effect. However, even if the two confirmation methods can be applied simultaneously if the monitored person does not answer the phone, the monitoring purpose cannot be achieved. The monitoring agency still needs to send employees to the monitoring location to confirm the monitored person's status. The last way is magnetic card confirmation. The magnetic card confirmation method is to install a magnetic card recognizer on the phone. When the monitoring personnel makes a call, the monitored person needs to insert the magnetic card into the recognizer to indicate his position. One loophole of this method is that other people may swipe the card instead of the monitored person himself.

The first generation of electronic monitoring technology uses telephone confirmation as the basic method. With the assistance of other technologies such as sonic, video, magnetic cards, etc., to enhance the accuracy of the monitored person's identity and location. The first-generation electronic monitoring's technical principles are relatively simple, with many loopholes, and the monitoring effect cannot be guaranteed. Furthermore, this technology does not fundamentally solve a problem, the time and effort that the monitoring personnel spends to confirm the monitored person's status. Therefore, it is gradually replaced by new technologies.

B. The Second Generation of Electronic Monitoring Technology: Radio Frequency Tags

Radiofrequency tag technology is mainly composed of transmitter, receiver, and observation center (Graham, 2017). The transmitter is usually an electronic tag worn on the monitored person, also known as a personal identification device. The transmitter usually sends radio signals to the receiver at random intervals of 1-10 seconds to reflect the location of the person being monitored. The initial transmitter is very large. To prevent the wearer from being tagged, it is often installed at a relatively hidden ankle. With the advancement of technology, it has now shrunk to the size of a watch and can be worn directly on the wrist. The court usually determines the range and distance of radio waves based on the case's merits. The receiver is installed at the residence or designated location of the monitored person. The receiver can only receive the signal from the transmitter within the radiation range of the radio wave. Therefore, as long as the receiver does not receive a signal, it indicates that the monitored person has exceeded the established range of activity. At this time, the receiver will automatically feedback this situation to the monitoring center. The observation center is responsible for collecting the signal from the receiver and then judging whether the monitored person is out of range of activity. When the receiver does not receive the transmitter's signal, the receiver will automatically send out the corresponding signal to the observation center. After the observation center receives this signal, it will immediately notify the police agency of this information, and the police will confirm the status of the monitored person. If the monitored person has escaped, the police will implement an arrest.

The feature of RFID technology monitoring is that it does not "track" the monitored person's activities but monitors him at a fixed time and a fixed location. Since the radio frequency tag is a relatively simple and stable electronic monitoring technology, it is welcomed by most countries. It has a wide range of applications in judicial practice.

C. The Third Generation of Electronic Monitoring Technology: Global Positioning System (GPS)

The GPS was originally developed for military purposes. It consists of four parts, including transmitter, satellite receiver, reference point, observation center.

The transmitter is worn on the wrist of the monitored person in the form of a watch. There is no limit to the range of the radio waves emitted by this transmitter, and all satellites can receive it. There was a ground base station or receiving vehicle between the transmitter and the satellite receiver as an information transmission intermediary in the early days. Nowadays, the transmitter transmits the electric wave directly to the satellite, and the electric wave is not easy to have interfered with. Only when there is a problem with the satellite receiving radio waves due to the terrain, the ground receiving vehicle can play the role of an information transmission intermediary. Satellite positioning is wireless and three-dimensional, and because of the rotation of the earth, for triangulation, there must be a reference point on the ground. The observation center on the ground is responsible for collecting the information from the satellite receiver and transmitting it to the police simultaneously. Suppose the monitored person violates the requirements during the monitoring period. In that case, the transmitter will transmit their location and time information to the satellite receiver, and then the satellite receiver will transmit this information to the observation center on the ground. The observation center will immediately transmit the information to the police, and the police will immediately arrest the monitored person who has left the monitoring based on the location information obtained.

If the judiciary decides to apply global positioning system monitoring technology to suspects or criminals, they usually customize corresponding restrictions based on their different situations. The monitored person will be prohibited from appearing in certain places, such as the victim's residence, school, or places related to criminal acts, which are called "exclusion zones." If the monitored person enters the "forbidden zone," he must leave within the specified time. Otherwise, the police will take corresponding actions against him. There are also some "Buffer Zones" around the "Forbidden Zone." When the monitored person enters the "Buffer Zone," the monitor will warn them that they are approaching the "Forbidden Zone" and ask them to leave as soon as possible (Development of Electronic Monitoring in Scotland, 2013).

GPS electronic monitoring technology has significant advantages. It can realize the real-time monitoring of the monitored person, monitor a larger range and more complicated area, effectively prevent the monitored person from committing a crime again and realize the victim and witness's comprehensive protection. However, since the use of GPS monitoring technology will generate a large amount of data information, it may infringe the information privacy of the monitored person. Therefore, compared with radiofrequency monitoring technology, the application of GPS technology in electronic monitoring is still in the development stage.

D. The Fourth Generation of Electronic Monitoring Technology: Biometrics

According to the European Probation Commission's definition, based on the principles of being more economical, modern, fair, and more respectful of human rights, biometric monitoring is a new type of monitoring mode that monitors and tracks the monitored objects by identifying and verifying biological characteristics.

The transmitter of electronic biometric monitoring is very secretive. It may be a tiny chip that can be directly installed in the body of the monitored person. When the monitored person violates the regulations, the transmitter will release a weak current to warn him of the violation. Even some transmitters can contain drugs that inhibit the nerves of the monitored person. When the monitored person is committing a violation, the drug will be automatically released to paralyze his nerves, thereby preventing him from committing a crime. Biometric monitoring has an important preventive effect on two types of special crimes, sexual crimes and alcohol crimes.

a. Sexual crimes

When applying biometric monitoring to sex offenders, the chip in the monitored person's body will collect and judge his different sexual reactions. When the monitoring system determines that a certain sexual response of the monitored person is abnormal, the nerve-suppressing drug contained in the chip will be released to reduce his sexual desire, prevent his sexual behavior, and reduce the possibility of the monitored person committing a crime, when the monitoring system judges that the sexual response of the monitored person is normal, the drug is not released, so that the normal sexual life of the monitored person will not be affected.

b. Alcohol crimes

Remote alcohol monitoring is the use of biometric technology to monitor criminals (Electronic Monitoring in Scotland Working Group Report, 2016) . Such crimes are usually caused by excessive drinks, such as violent crimes between family members. Remote alcohol monitoring includes two ways to determine whether the monitored person has drinking behavior. One is to regularly detect the alcohol content in the monitored person's saliva through a breath analyzer. The other is to use a "transdermal" alcohol monitor (also known as a sober bracelet) to regularly collect sweat on the skin of the monitored person and analyze its alcohol content. If the monitored person's alcohol test result exceeds the standard, the monitoring system will issue an alarm and notify the monitoring personnel. The sober bracelet can also release current to prevent the monitored person from continuing to drink. The information collected by the breath analyzer or the awake bracelet will be sent to the electronic monitoring center regularly. The data will be analyzed and evaluated by the monitoring personnel (Development of Electronic Monitoring in Scotland, 2013) .

The main purpose of the previous generations of electronic monitoring technology is to limit the space and time of the monitored person's activities, which is different from biometric monitoring. Biometric monitoring is specifically aimed at a certain behavior of the monitored person. It aims to help the monitored person change a certain behavior by an indirect method and achieve the monitoring purpose in a more advanced and more hidden way. Although biometric technology solves the

problem, the transmitter is easily disassembled and destroyed when worn outside the human body. Nevertheless, it should also be realized that biometric technology is more invasive to the body and may cause more serious human rights violations.

2. HISTORY OF ELECTRONIC MONITORING IN CHINESE CRIMINAL JUSTICE

In the Chinese criminal justice process, there are two kinds of applications of electronic monitoring. First, electronic monitoring can be applied to community corrections objects during the execution phase of their sentences. The main purpose is to monitor the offenders' serving their sentences and prevent them from committing crimes again. Second, electronic monitoring can be applied to criminal suspects under residential monitoring at the pre-trial stage. The main purpose of electronic monitoring as an alternative to pre-trial detention is to monitor suspects' activities and prevent them from escaping. The development of the application of electronic monitoring in Chinese criminal justice can be divided into four stages.

A. Initial Attempts

In China, the first application of electronic monitoring in the criminal justice process was during the 2008 Beijing Olympics. The purpose was to maintain society's security and ensure the smooth holding of the Olympic Games. The government used GPS technology and fingerprint identification technology to supervise and manage people serving sentences in the community 24 hours a day.

The management system consists of two parts: the supervision equipment in the community correction supervision center and the terminal equipment (electronic anklet) worn by correctional officers. The electronic anklet is essentially an electronic transmitter that emits a signal at regular intervals. First, the signal is sent to an "area signal controller." Then, the controller sends the signal to the computer in the supervisory center through the public telephone network. The supervisor can accurately grasp the identity and real-time movement of the monitored person through the management system. Once the monitored person's activities exceed the scope of activities or activity trajectory is not normal, supervisors can warn them. Simultaneously, the fingerprint recognition technology in the system can identify the monitored person's identity to achieve two preventive purposes. On the one hand, to prevent the separation of the monitored person and the electronic anklet. On the other hand, it prevents a third person from impersonating the monitored person to wear the electronic anklet.

B. Development Stage

In 2009, the community corrections institutions in Jiangsu Province took the lead in adopting the way of cell phone positioning to track and supervise community service prisoners. Cell phone positioning is mainly through the cooperation between judicial organs and communication companies to establish an information platform to implement full tracking and monitoring, track inquiry, real-time warning, and information promoting. Through the electronic map for community service prisoners positioning monitoring, monitoring, and analysis of the scope of their activities and activity patterns, to achieve the positioning of community service prisoners tracking and other multi-functional community correction work in one of the whole information management.

After learning from Jiangsu's experience, many cities have applied cell phone positioning technology in the community correction process, such as Beijing, Shanghai, Hangzhou, and Nanjing. Before applying cell phone positioning monitoring, community service prisoners need to sign an agreement or consent form with the judicial authorities, such as the "*Acceptance of Community Correction Electronic Supervision Guarantee*." The monitored person must ensure that the cell phone is not separated from the person. The monitored person's movement track will be presented on the computer of the monitoring center in the form of flashing light dots. If the trajectory of the light dots is not continuous, the monitor will call the monitored person's cell phone to check his status and location (Liu Qiang, 2011).

Although cell phone location monitoring is considered to be more convenient and can achieve real-time monitoring, some scholars argue that mobile phone location monitoring can only achieve the function of knowing the activities of the monitored person, but not the function of controlling (Wu Yuhong, 2013). Especially for a criminal who deliberately evades supervision, if he leaves his residence without permission, hides briefly, destroys electronic communication devices, and commits another crime, mobile phone location monitoring cannot play any effective role.

C. Maturity Stage

In December 2014, the Shanghai First Intermediate People's Court used electronic anklets for the first time in parole proceedings. The judge said that the use of electronic monitoring is to use remote positioning technology to strengthen the supervision of parolees and prevent them from committing crimes again.

The Shanghai Community Correction Office has improved its monitoring technology, upgraded its terminal equipment, and adopted internationally accepted electronic monitoring equipment. The common method is to apply the combination of cell phone positioning and electronic anklet. On the one hand, the activity trajectory of correctional subjects is collected through cell phone positioning. The correctional subject must ensure that the cell phone is normally on 24 hours. The monitoring system will immediately issue an alarm if the cell phone signal disappears for more than five minutes.

On the other hand, because of cell phone positioning limitations, electronic anklets are added in some areas to complement the monitoring. A major problem with cell phone positioning is that there are many areas with weak cell phone signals. In these areas, it is usually impossible or difficult to detect the cell phone signal. At this point, the electronic foot ring signal can be used to locate the person being monitored. Compared with cell phone positioning, electronic foot ring positioning is more accurate, even to the floor where you are. Another problem of cell phone positioning is that it is easy to be separated from the user, such as discarded or handed over to others.

In contrast, the electronic anklet cannot be removed, which excludes the possibility that the community correctional subject can escape from monitoring. A community corrections client wearing an electronic anklet can only move within the jurisdictional limits. Once his activity is out of range, or if he is inactive for a long time, the terminal device will send an alert to the monitoring center to confirm the monitored person's status.

D. Innovation Stage

Under the influence of the epidemic in 2020, how to scientifically and rationally reduce the number of detainees in the pre-trial stage and reduce infection risk for suspects in custody. It has become a real challenge for the judiciary as well as how to supervise and manage non-custodial personnel effectively. In this context, the Public Security Bureau and the People's Procuratorate of Hangzhou, Zhejiang Province, have jointly developed the "Digital Monitoring System for Non-custodial Persons" (abbreviated as non-custodial code monitoring system) after many demonstrations.

The digital monitoring system for non-custodial personnel is a pilot attempt of electronic monitoring in the bail application process. Applicable objects need to meet strict conditions.

First of all, suspects or criminals who can apply the "non-custodial code" monitoring system need to meet the following conditions:

- a) have a statutory lighter punishment, mitigated punishment, and show repentance;
- b) 60 years of age or older;
- c) blind person, deaf person and other disabled person;
- d) The head or technical backbone of private enterprises of a certain scale, the facts of the crime are basically investigated, admits guilt and accepts punishment, voluntarily returns the illegally obtained money, and other circumstances.

Second, suspects or criminals with the following circumstances prohibit the application of non-custodial code monitoring system:

- a) may commit new crimes;
- b) endanger national security, public security or social order;
- c) destruction of evidence, falsification of evidence, interference with witness testimony or collusion;
- d) retaliation against victims, informants, accusers;
- e) attempted suicide or escape.

The bailee who meets the conditions for electronic monitoring downloads the "non-custodial code" APP (user version) on his cell phone, authenticates his identity, completes user registration, and starts to check in the app daily. At the same time, the staff in charge of the case also download the APP (monitoring version) on their cell phones to control, monitor, and record the activities and status of the bailee through the APP.

According to the behavior and status of non-custodial personnel during the period of bail and residential monitoring, the "non-custodial code" app will make a comprehensive assessment and score of their performance. According to the risk level of the supervised person, the assessment result will appear in the app in three forms: green QR code, yellow QR code, and red QR code. The green QR code indicates that the score is over 60 points, and the supervised person is generally dangerous. The yellow QR code indicates that the score is higher than 30 points and lower than 60 points, and the supervised person is moderately dangerous. The red QR code indicates that the score is less than 30 points, and the supervised person is very dangerous. According to the specific situation, the supervised person can be forcibly arrested. Set up hierarchical dynamic supervision on the supervised person based on the evaluation result. The staff in charge of the case will set up dynamic supervision schemes with different security levels for the supervised person based on the evaluation results.

The "non-custodial code" monitoring system is a new development in electronic monitoring. It is an innovative exploration of non-custodial coercive measures by the Chinese judiciary. This monitoring system is still in the pilot stage and has not been extended nationwide. However, it has already achieved good practical results. From March to October 2020, through the "non-custodial code" monitoring system of Hangzhou has effectively supervised 1607 people, and no one escaped from the management.

3. THE LEGAL FRAMEWORK OF ELECTRONIC MONITORING

A. Application of Electronic Monitoring in Community Corrections

a. Community Corrections Law of the People's Republic of China (CCL)

In December 2019, the "Community Corrections Law of the People's Republic of China" was officially released. The specific requirements for the use of electronic positioning devices during community corrections are stipulated in Article 29 of the CCL.

Approval subject

The person in charge of the county-level judicial, administrative department is responsible for approving the application of the electronic positioning device.

Applicable object

The targets of community corrections include four types of criminals. A convict who is sentenced to supervision without incarceration is granted probation or parole or permitted to serve a sentence outside an incarceration facility temporarily.

Applicable conditions

Where a community correction object falls under any of the following circumstances, an electronic locating device may be used to strengthen supervision and management: a) He or she violates an injunction of the people's court; b) Without any justified reason, he or she leaves the county or city where he or she lives without approval; c) He or she refuses to report his or her activities according to the relevant provisions and is given a warning; d) He or she is given public security administration punishment for violation of the provisions on supervision and management; e) A request is intended to be submitted for revoking probation or parole or taking the object temporarily serving a sentence outside an incarceration facility into custody.

Applicable period

The time limit for using the electronic locating device prescribed shall not exceed three months. Where such device does not need to be continuously used, it shall be removed on time; and upon expiry of the time limit, if such device still needs to be continuously used upon assessment, the time limit may, upon approval, be extended for up to three months each time.

Duty of confidentiality

A community correction institution shall keep the information obtained through an electronic locating device strictly confidential, and the relevant information shall only be used for the community correction work and shall not be used for any other purpose.

b. The Measures for the Implementation of the Community Correction Law of the People's Republic of China (2020 Revision) (MICCL)

After the CCL was promulgated, notice by the Supreme People's Court, the Supreme People's Procuratorate, the Ministry of Public Security, and the Ministry of Justice of Issuing the Measures for the Implementation of the Community Correction Law of the People's Republic of China (2020 Revision) on June 18, 2020. Article 37 of MICCL clarifies the definition of electronic positioning devices and requires correctional institutions to perform the obligation of notification. The "electronic positioning devices" means the special electronic equipment which can determine the position and otherwise regulate the person subject to community correction by using satellite and other positioning technologies, and has anti-disassembly, anti-explosion, waterproof and other functions, such as electronic positioning wristband, but excluding mobile phone and other equipment.

Where the person subject to community correction is subject to supervision and administration by adopting electronic positioning devices, the person subject to community correction shall be informed of the regulation period and requirements as well as the consequences of violating regulatory provisions.

B. Application of Electronic Monitoring During Residential Confinement

According to the Criminal Procedure Law of the People's Republic of China, there are five types of compulsory measures in criminal procedures. According to the degree to which compulsory measures interfere with freedom, the five compulsory measures from light to heavy are forced appearance, bail, residential confinement, detention, and arrest. Among the five compulsory measures, only residential confinement has clear legal provisions regarding the application of electronic monitoring.

a. Criminal Procedure Law of the People's Republic of China (2018 Amendment) (CPL)

Article 78 of CPL, Execution authorities may oversee criminal suspects or defendants under residential confinement regarding their compliance with residential confinement provisions by electronic monitoring, random inspection, and other monitoring means.

b. Rules of Criminal Procedure for People's Procuratorates (2019 Revision) (RCP)

Article 110 of RCP, A people's procuratorate may, based on the specific circumstances of a case, request the public security authority to supervise the criminal suspect in residential confinement complying with the provisions on residential confinement by using electronic monitoring, irregular inspections, and other monitoring methods.

C. Apply Electronic Monitoring to Suspects of Terrorist Activities

The Counterterrorism Law of the People's Republic of China (CL)

According to Article 53 of the Counterterrorism Law of the People's Republic of China (2018 Amendment). The public security authority may take electronic monitoring, inspection from time to time, and other means to oversee the suspect's compliance with restrictive measures. The period for taking electronic monitoring shall not exceed three months. If it is unnecessary to continue taking restrictive measures, the measures shall be removed on time.

4. THE EFFECTIVENESS OF ELECTRONIC MONITORING

A. Reduce the Number of Detainees

Electronic monitoring is an alternative to detention; its primary goal is to reduce the number of suspects or criminals detained in prison. This goal is also the motivation to promote the application of electronic monitoring. Reduce the number of people in prison by increasing the number of people on bail and those serving sentences in the community. In this way, judicial expenditures can be reduced, and the government's financial burden can be lightened. It is also possible to segregate some minor offenders outside of prison in this way. The criminal experience of minor offenders learning from serious offenders is avoided so that offenders do not affect each other.

B. Ensuring the Effectiveness of Bail

The reason for the low use rate of bail in China is the fear that the suspect will run away and interfere with the witness's testimony, making the trial impossible. The application of electronic monitoring to the bail procedure has strengthened the monitoring of criminal suspects. The positioning of electronic monitoring can effectively prevent the suspect from escaping and prevent the suspect from approaching the victim or witness. At the same time, it can also ensure that the suspect is under monitoring and can participate in the trial on time. In general, the use of electronic monitoring ensures the effectiveness of bail enforcement, and to a certain extent, it will encourage more use of bail.

C. Reduce the Pressure of Supervision

According to statistics from the Ministry of Justice, since 2013, judicial institutions across the country have received a total of 1.896 million criminals serving sentences in the community, and a total of 1.745 million have been removed. The net increase in the number of criminals serving sentences in the community was 151,000. Currently, there are more than 700,000 people serving sentences in communities across the country, but only 83,036 social workers are engaged in community corrections. The contradiction between the surge in the number of people serving sentences in the community and the traditional management of community corrections is becoming more and more obvious. Reality requires the introduction of smarter and more efficient supervision methods to improve supervision efficiency. The widespread use of electronic monitoring is the use of "invisible eyes" to complete remote monitoring. Electronic monitoring helps supervisors accurately grasp the movements of the monitored persons, understand their behavior and status, and thus fairly evaluate their performance. In this way, a supervisor can supervise multiple monitored persons at the same time through electronic monitoring technology. This method greatly improves the efficiency of supervision and effectively reduces the pressure on supervisors.

D. Alleviate the Shortage of Police Officers and Reduce Financial Expenditures

In the past judicial practice, the rate of application of the residential monitoring system was extremely low. One of the important reasons is that the application of this mandatory measure requires a large investment of personnel and funds. Some scholars have investigated the application of residential monitoring in a basic public security bureau and found the following characteristics.

First, as one of the mandatory measures, the utilization rate of residential monitoring is particularly low. The basic public security bureau only applied residential monitoring to 11 people during the five years from 2003 to 2007. Second, the cost of applying residential monitoring is relatively high. For example, during the period of residential monitoring, the average daily expenses for hotel rooms and staff meals are about 150 yuan. According to Article 79 of the CPL, the maximum period of residential monitoring is six months. If calculated according to the above standards, a total of 27,000 yuan will be spent to handle one case where the period of applicable residential monitoring is six months. However, the total funding of the basic public security bureau for handling cases for the whole year was less than 200,000 yuan. The cost of a case accounts for one-tenth of the total expenditure. Therefore, residential monitoring must not be favored by case-handling personnel. Third, multiple police officers are required to take turns monitoring suspects or criminals during residential monitoring. To ensure that the suspect does not escape or commit suicide during residential monitoring, three police officers and two auxiliary staff are usually required to take turns to look after the suspect. Too many police officers are put in to perform supervision tasks, making the number of remaining police officers in police stations insufficient. This affects the efficiency of other cases. Finally, the police who perform monitoring tasks are under great pressure. During the period of residential monitoring in the designated residence, the suspect is not wearing handcuffs and is free in the room. To prevent the suspect from escaping or committing suicide, the

police need to maintain a high level of vigilance. Especially at night, this vigilance at work makes the police nervous and often unable to sleep.

The use of electronic monitoring in residential monitoring can provide an effective supplement to the limited number of police officers. On the one hand, the police who perform supervision tasks are replaced by electronic monitors. Supervisors can realize the purpose of real-time monitoring of suspects through electronic monitoring. Moreover, one supervisor can supervise multiple suspects at the same time. The supervisor can observe the status of the suspect at any time. If the suspect escapes or commits suicide, the supervisor can notify the police immediately and take corresponding measures. On the other hand, with the support of electronic monitoring technology, if the suspect or criminal has a fixed residence, residential monitoring can be implemented in his residence instead of in a hotel or rented place. Electronic monitoring equipment can be installed in the suspect's residence, and remote monitoring will greatly reduce the cost of implementing residential monitoring.

E. Help Criminals Return to Society as Soon as Possible

The concept of reintegration was put forward in the 1960s and 1970s. Its ideological connotation is to help criminals adapt to social life, reintegrate into society and start a new life and work, and stop committing crimes again. Community corrections is a criminal measure to help offenders reintegrate into society. It achieves the goal of returning criminals to society as soon as possible by allowing criminals to serve their sentences in the community without being separated from public life. However, it should also be realized that criminals serving sentences in the community are still dangerous, and they may commit crimes again. In this case, electronic monitoring is an important tool to ensure the functioning of community corrections.

The application of electronic monitoring in community corrections ensures the effectiveness of community punishments. On the one hand, because of agreeing to the application of electronic monitoring, criminals who execute penalties in the community can leave the prison as soon as possible, shortening the time to escape from social life. Under electronic monitoring, criminals can fully participate in social life, family life, and work again in preparation for a smooth return to society after the execution of the penalty. On the other hand, due to the hindrance of the identity of the criminal, it is not easy for criminals to find a job while serving their sentence in the community. In this case, it is easy for criminals to commit crimes again to survive. If the offender commits a crime again, he will be discovered soon, and he will face more severe punishment. At this time, electronic monitoring has played a reminder and supervisory function.

5. SOME PROBLEMS IN THE APPLICATION PROCESS OF ELECTRONIC MONITORING

A. The Legal Provisions on Electronic Monitoring Are Not Comprehensive

Deprivation of citizens' basic rights and violations of civil liberties should be stipulated by law. As a compulsory criminal measure, electronic monitoring applies to suspects or defendants. Although it is relatively lighter than custody, it still has the possibility of infringing on citizens' rights and freedoms. Therefore, the application of electronic monitoring, including its approval subject, application method, application standard, supervision procedure, and cancellation standard, should be stipulated by law. However, the current contradiction is that electronic monitoring has been applied to bail procedures in judicial practice, but whether it can be applied to bail procedures and how to apply it is not regulated by the Criminal Procedure Law. The lack of specific legal provisions has become a major constraint on the application and development of electronic monitoring in criminal justice procedures.

B. Electronic Monitoring May Infringe the Privacy of Citizens

The "privacy" mentioned here includes two aspects. One is the privacy of the person being monitored, which is not related to the situation of the case. The second is the privacy of family members who live with the monitored person or other people who meet with the monitored person. When the monitored person is under 24-hour uninterrupted tracking and positioning, his daily activities are completely exposed to the monitor. This information not only includes clues or evidence useful for solving the case but also includes information that is not related to the case and belongs to the privacy of the monitored person. Besides, the life activities of family members living with the monitored person are also being monitored, and their privacy is also exposed to electronic monitoring. Once this personal privacy is leaked or abused, it will seriously damage the rights of the monitored person, their family, and friends.

C. The Application of Electronic Monitoring Lacks Pertinence

According to the application of electronic monitoring in community corrections, there are two main problems in the specific application process. One is to apply the same electronic monitoring method without distinguishing the specific situation of the correction target. For example, some supervisory agencies apply mobile phone positioning monitoring to all correction objects. Different supervision methods are not applied according to the degree of danger of the monitored object. Unless the monitored person is older, illiterate, or physically disabled and cannot use a mobile phone, other normal correction subjects will receive a unified positioning mobile phone when they register with the supervision agency, and the monitoring agency will not take back the positioning mobile phone until the correction is canceled. According to Article 2 of the CCL, there are four main types of criminals who practice community corrections. Although these criminals are all serving sentences in the community, the seriousness of their crimes is not the same, and their dangers are also very different. If the specific situation of the correction target is not distinguished, a unified electronic monitoring mode is applied to them. It will result in too strict supervision of low-risk criminals and too loose supervision of high-risk criminals. This method is not conducive to the electronic monitoring function. The lack of targeted monitoring methods is not conducive to exerting the supervisory and corrective functions of electronic monitoring.

6. PRINCIPLES THAT SHOULD BE ADHERED TO WHEN APPLYING ELECTRONIC MONITORING

A. The Principle of Legality

It is used as a means of supervision in criminal justice procedures, and the application of electronic monitoring will restrict citizens' personal freedom within a certain range. Regardless of whether electronic monitoring is punitive or auxiliary, its application may violate the basic rights of citizens. According to Article 37 of the Constitution of the People's Republic of China, freedom of the person of citizens of the People's Republic of China is inviolable; unlawful detention or deprivation or restriction of citizens' freedom of the person by other means is prohibited. The appropriateness of electronic monitoring must strictly comply with the applicable procedures, conditions, objects, methods, and time limits prescribed by the law. Particular attention should be paid to the legality of the application of electronic monitoring purposes. In the pre-trial stage, the purpose of applying electronic monitoring and detention is the same. Both are to ensure that the suspect participates in the trial on time and protect the safety of witnesses and evidence. This also shows that electronic monitoring cannot be used as a means of discovering facts of a case, collecting evidence, or punishing criminal suspects and defendants.

B. The Principle of Necessity

Compared with pre-trial detention, electronic monitoring allows suspects or criminals to have a wider range of activities and more free time. However, at the same time, it should be noted that electronic monitoring also has the danger of expanding the network of criminal measures. Therefore, to prevent the abuse of electronic monitoring, its application should follow the principle of necessity.

First, when judging whether to apply compulsory measures to suspects or criminals, judicial organs should give priority to other non-custodial measures that are more relaxed than electronic monitoring. Secondly, after determining the application of electronic monitoring, the judicial organ should determine a reasonable method and time limit for electronic monitoring based on the suspect's danger and the possibility of escape. Finally, during the application of electronic monitoring, if the monitoring agency finds that the possibility of the monitored person committing a crime is reduced, the personal risk becomes lower. At this time, the monitoring agency can adjust the daily monitoring time and appropriately expand the activity area of the monitored person. After the evaluation result of the monitored person is fully qualified, the monitoring agency shall immediately disarm the electronic monitoring equipment.

C. The Principle of Judicial Review

Electronic monitoring is a compulsory criminal measure, and its application may violate the basic rights of citizens. Therefore, a neutral judicial institution should conduct a judicial review of electronic monitoring. Judicial review includes pre-review and post-review. The review before the application of electronic monitoring is called pre-review. Its purpose is to

determine whether electronic monitoring should be applied to criminal suspects or criminals. The review after the application of electronic monitoring is called a post-mortem review. Its purpose is to determine whether it is necessary to continue to apply electronic monitoring. Although China's judicial review system is not perfect, it can refer to the method of review of the necessity of detention. The procuratorate organs shall review the necessity and continuing necessity of the application of electronic monitoring.

7. CONCLUSION

As a criminal supervision measure, electronic monitoring has been applied for a relatively short time in China's criminal justice procedures. The degree of development in the penalty execution stage and the pre-trial stage is not balanced.

Electronic monitoring has a relatively long history of development in community corrections procedures, with more comprehensive legislative provisions and richer judicial practice experience. On the contrary, in the pre-trial stage, electronic monitoring was not included in compulsory measures until the 2012 Criminal Procedure Law was revised. The application of electronic monitoring in the pre-trial stage has a short history, and due to the exploration and innovation of judicial organs, the legislative regulations have not kept up with the pace of judicial practice. The application of electronic monitoring in the pre-trial stage lacks specific legal regulations and operational guidelines. However, electronic monitoring can improve judicial efficiency, save financial expenditure, reduce the pressure of custody, alleviate the shortage of police, and help suspects or criminals return to society. The application of electronic monitoring has been widely supported by officials and scholars. For example, the Supreme People's Procuratorate's "Thirteenth Five-Year Plan" period procuratorial work development plan issued by the Supreme People's Procuratorate pointed out that it is necessary to actively promote the legislative process of the use of electronic monitoring and give full play to the system effects of non-custodial compulsory measures such as bail. Professor Dayuan Han of Peking University proposed that "we should continue to promote the intelligent transformation of alternative detention measures, the typified reform of bail, the use of modern information technology to build a digital monitoring platform, and the use of electronic anklets and "non-custodial codes" to strengthen the protection of bail Supervision and management".

As a digital supervision and management method, electronic monitoring will become an important part of China's criminal justice reform. The application of electronic monitoring in the community corrections stage will continue to deepen, and the application in the pre-trial stage will gradually achieve legalization and specificity.

The promotion and application of electronic monitoring can be divided into two steps. First, select some pilot cities across the country to promote and test the innovative Digital Monitoring System for Non-custodial Persons in Hangzhou. Further, adjust and optimize the electronic monitoring mode according to the pilot situation and clarify its scope of application and operation methods. Secondly, based on the feedback from the pilot, the law revision process was initiated at an appropriate time, and the provisions of the Criminal Procedure Law on the application of electronic monitoring were revised to consolidate the results of the pilot in legal form. The specific proposal is: a) Add a provision on electronic monitoring after Article 71 of the Criminal Procedure Law. The enforcement agency may use electronic monitoring and other methods to supervise the compliance of bail suspects or defendants; b) Amend Article 78 of the Criminal Procedure Law to, for criminal suspects or defendants under residential monitoring, the enforcement agency may adopt methods such as electronic monitoring and irregular inspections to supervise their compliance with the residential monitoring regulations.

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